**3GPP TSG-CT WG1 Meeting #130-eC1-213xyz**

**Electronic meeting, 20-28 May 2021 (revision of** **C1-212974)**

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| *CR-Form-v12.1* | | | | | | | | |
| **CHANGE REQUEST** | | | | | | | | |
|  | | | | | | | | |
|  | **24.379** | **CR** | **0709** | **rev** | **1** | **Current version:** | **17.2.0** |  |
|  | | | | | | | | |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* | | | | | | | | |
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| ***Proposed change affects:*** | UICC apps |  | ME | **x** | Radio Access Network |  | Core Network | **x** |

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|  | | | | | | | | | | |
| ***Title:*** | Call transfer for MCPTT private call, call control part | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Source to WG:*** | Kontron Transportation France | | | | | | | | | |
| ***Source to TSG:*** | C1 | | | | | | | | | |
|  |  | | | | | | | | | |
| ***Work item code:*** | eMONASTERY2 | | | | |  | ***Date:*** | | | 2021-05-12 |
|  |  | | | |  | |  | | |  |
| ***Category:*** | **B** |  | | | | | ***Release:*** | | | Rel-17 |
|  | *Use one of the following categories:* ***F*** *(correction)* ***A*** *(mirror corresponding to a change in an earlier release)* ***B*** *(addition of feature),* ***C*** *(functional modification of feature)* ***D*** *(editorial modification)*  Detailed explanations of the above categories can be found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | | | | | | | | *Use one of the following releases: Rel-8 (Release 8) Rel-9 (Release 9) Rel-10 (Release 10) Rel-11 (Release 11) ... Rel-15 (Release 15) Rel-16 (Release 16) Rel-17 (Release 17) Rel-18 (Release 18)* | |
|  |  | | | | | | | | | |
| ***Reason for change:*** | | Adding call transfer for MCPTT private call. Requirements are defined in 3GPP TS22.179:  [R-5.6.3-015] The MCPTT Service shall provide a mechanism for an authorized MCPTT User to configure forwarding of incoming MCPTT Private Calls (with Floor control) to another MCPTT user in the following situations:  - Always  - If the MCPTT User is not reachable  - If the incoming private call is a call with manual commencement mode and the MCPTT User does not answer within a configured period  - Based on manual input of the MCPTT User  [R-6.7.4-016] The MCPTT Service shall provide a mechanism for an authorized MCPTT User to configure forwarding of incoming MCPTT Private Calls (without Floor control) to another MCPTT user in the following situations:  - Always  - If the MCPTT User is not reachable  - If the incoming private call is a call with manual commencement mode and the MCPTT User does not answer within a configured period  - Based on manual input of the MCPTT User  Stage 2 is defined in 3GPP TS 23.379 in subclause 10.7.5 MCPTT call forwarding for private calls | | | | | | | | |
|  | |  | | | | | | | | |
| ***Summary of change:*** | | Defining new procedures to request and perform call transfer for private call. Additional changes in existing private call procedures to handle call transfer | | | | | | | | |
|  | |  | | | | | | | | |
| ***Consequences if not approved:*** | | Required feature not available | | | | | | | | |
|  | |  | | | | | | | | |
| ***Clauses affected:*** | | 4.4.2, 6.2.0.1, 6.3.1.3, 6.3.2.x (new), 6.3.2.y (new), 11.1.1.2.1.1, 11.1.1.2.1.2, 11.1.1.2.2.1, 11.1.1.2.2.2, 11.1.1.3.1.1, 11.1.1.3.1.2 11.1.1.3.2, 11.1.x (new), 11.1.x.1 (new), 11.1.x.2 (new), 11.1.x.2.1 (new), 11.1.x.2.2 (new), 11.1.x.2.3 (new), 11.1.x.3 (new), 11.1.x.3.1 (new), 11.1.x.3.2 (new), 11.1.x.4 (new), B.2.x (new), F.1.3 | | | | | | | | |
|  | |  | | | | | | | | |
|  | | **Y** | **N** |  | | | |  | | |
| ***Other specs*** | |  | **X** | Other core specifications | | | | TS/TR ... CR ... | | |
| ***affected:*** | |  | **X** | Test specifications | | | | TS/TR ... CR ... | | |
| ***(show related CRs)*** | |  | **X** | O&M Specifications | | | | TS/TR ... CR ... | | |
|  | |  | | | | | | | | |
| ***Other comments:*** | | Newly introduced warning text codes (xxx, xxy, xxz) are highligted to make it easier for MCC to find these, allocate numbers, and assign the numbers appropriately for the agreed CR. | | | | | | | | |
|  | |  | | | | | | | | |
| ***This CR's revision history:*** | |  | | | | | | | | |

\* \* \* First Change \* \* \* \*

### 4.4.2 Warning texts

The text string included in a Warning header field consists of an explanatory text preceded by a 3-digit text code, according to the following format in Table 4.4.2-1.

Table 4.4.2-1 ABNF for the Warning text

warn-text =/ DQUOTE mcptt-warn-code SP mcptt-warn-text DQUOTE

mcptt-warn-code = DIGIT DIGIT DIGIT

mcptt-warn-text = \*( qdtext | quoted-pair )

Table 4.4.2-2 defines the warning texts that are defined for the Warning header field when a Warning header field is included in a response to a SIP INVITE request as specified in subclause 4.4.1.

Table 4.4.2-2: Warning texts defined for the Warning header field

|  |  |  |
| --- | --- | --- |
| Code | Explanatory text | Description |
| 100 | function not allowed due to <detailed reason> | The function is not allowed to this user.  The <detailed reason> will be either "group definition", "access policy", "local policy", "user authorisation" or "pre-established session not supported", or can be a free text string. |
| 101 | service authorisation failed | The service authorisation of the MCPTT ID against the IMPU failed at the MCPTT server. |
| 102 | too many simultaneous affiliations | The MCPTT user already has N2 maximum number of simultaneous affiliations (see <MaxAffiliationsN2> element of user profile configuration document). |
| 103 | maximum simultaneous MCPTT group calls reached | The number of maximum simultaneous MCPTT group calls supported for the MCPTT user has been exceeded. |
| 104 | isfocus not assigned | A controlling MCPTT function has not been assigned to the MCPTT session. |
| 105 | subscription not allowed in a broadcast group call | Subscription to the conference event package rejected during a group call initiated as a broadcast group call. |
| 106 | user not authorised to join chat group | The MCPTT user is not authorised to join this chat group. |
| 107 | user not authorised to make private calls | The MCPTT user is not authorised to make private calls. |
| 108 | user not authorised to make chat group calls | The MCPTT user is not authorised to make chat group calls. |
| 109 | user not authorised to make prearranged group calls | The MCPTT user is not authorised to make group calls to a prearranged group. |
| 110 | user declined the call invitation | The MCPTT user declined to accept the call. |
| 111 | group call proceeded without all required group members | The required members of the group did not respond within the acknowledged call time, but the call still went ahead. |
| 112 | group call abandoned due to required group members not part of the group session | The group call was abandoned, as the required members of the group did not respond within the acknowledged call time. |
| 113 | group document does not exist | The group document requested from the group management server does not exist. |
| 114 | unable to retrieve group document | The group document exists on the group management server but the MCPTT server was unable to retrieve it. |
| 115 | group is disabled | The group has the <disabled> element set to "true" in the group management server. |
| 116 | user is not part of the MCPTT group | The group exists on the group management server but the requesting user is not part of this group. |
| 117 | the group identity indicated in the request is a prearranged group | The group id that is indicated in the request is for a prearranged group, but did not match the request from the MCPTT user. |
| 118 | the group identity indicated in the request is a chat group | The group id that is indicated in the request is for a chat group, but did not match the request from the MCPTT user. |
| 119 | user is not authorised to initiate the group call | The MCPTT user identified by the MCPTT ID is not authorised to initiate the group call. |
| 120 | user is not affiliated to this group | The MCPTT user is not affiliated to the group. |
| 121 | user is not authorised to join the group call | The MCPTT user identified by the MCPTT ID is not authorised to join the group call. |
| 122 | too many participants | The group call has reached its maximum number of participants. |
| 123 | MCPTT session already exists | Inform the MCPTT user that the group call is currently ongoing. |
| 124 | maximum number of private calls reached | The maximum number of private calls allowed at the MCPTT server for the MCPTT user has been reached. |
| 125 | user not authorised to make private call with automatic commencement | The MCPTT user is not authorised to make a private call with automatic commencement. |
| 126 | user not authorised to make private call with manual commencement | The MCPTT user is not authorised to make a private call with manual commencement. |
| 127 | user not authorised to be called in private call | The called MCPTT user is not allowed to be part of a private call. |
| 128 | isfocus already assigned | The MCPTT server owning an MCPTT group received a SIP INVITE request destined to the MCPTT group from another MCPTT server already assigned as the controlling MCPTT function and the MCPTT server owning the MCPTT group does not support mutual aid or supports trusted mutual aid but does not authorise trusted mutual aid. |
| 136 | authentication of the MIKEY-SAKKE I\_MESSAGE failed | The MCPTT client's application of the procedures of 3GPP TS 33.180 [78] to authenticate the received I\_MESSAGE fails. |
| 137 | the indicated group call does not exist | The participating MCPTT function cannot find an ongoing group session associated with the received MCPTT session identity. |
| 138 | subscription of conference events not allowed | The controlling MCPTT function could not allow the MCPTT user to subscribe to the conference event package. |
| 139 | integrity protection check failed | The integrity protection of an XML MIME body failed. |
| 140 | unable to decrypt XML content | The XML content cannot be decrypted. |
| 141 | user unknown to the participating function | The participating function is unable to associate the public user identity with an MCPTT ID. |
| 142 | unable to determine the controlling function | The participating function is unable to determine the controlling function for the group call or private call. |
| 143 | not authorised to force auto answer | The calling user is not authorised to force auto answer on the called user. |
| 144 | user not authorised to call this particular user | The calling user is not authorised to call this particular called user. |
| 145 | unable to determine called party | The participating function was unable to determine the called party from the information received in the SIP request. |
| 146 | T-PF unable to determine the service settings for the called user | The service settings have not been uploaded by the terminating client to the terminating participating server. |
| 147 | user is authorized to initiate a temporary group call | The non-controlling MCPTT function has authorized a request from the controlling MCPTT function to authorize a user to initiate an temporary group session. |
| 148 | group is regrouped | The group hosted by a non-controlling function is part of a temporary group session as the result of the group regroup function. |
| 149 | SIP-INFO request pending | The MCPTT client needs to wait for a SIP-INFO request with specific content, before taking further action. |
| 150 | invalid combinations of data received in MIME body | The MCPTT client included invalid combinations of data in the SIP request. |
| 151 | user not authorised to make a private call call-back request | The MCPTT user is not authorised to make a private call call-back request. |
| 152 | user not authorised to make a private call call-back cancel request | The MCPTT user is not authorised to make a private call call-back cancel request. |
| 153 | user not authorised to call any of the users requested in the first-to-answer call | All users that were invited in the first-to-answer call cannot be involved in a private call with the inviting user. |
| 154 | user not authorised to make ambient listening call | The MCPTT user is not authorised to make an ambient listening call. |
| 155 | user not authorised to change user's selected group | The MCPTT user is not authorised to change the selected group of the targeted user. |
| 156 | user not authorised to originate a first-to-answer call | The MCPTT user is not authorised to make a first-to-answer call. |
| 157 | user not authorised to request a remotely initiated group call | The MCPTT user is not authorised to request a remotely initiated group call. |
| 158 | user not authorised to request a remotely initiated private call | The MCPTT user is not authorised to request a remotely initiated private call. |
| 159 | user not authorised to be called by this originating user | The called user is not authorised to receive a call by this originating user. |
| 160 | user not authorised to request creation of a regroup | The user is not authorised to request creation of a regroup. |
| 161 | user not authorised to request removal of a regroup | The user is not authorised to request removal of a regroup. |
| 162 | group call abandoned due to required group members not affiliated | The group call was abandoned as the required number of affiliated group members is not met or some required members are not affiliated. |
| 163 | the group identity indicated in the request does not exist | The server determines that the group identity indicates a user or group regroup based on a preconfigured group that does not exist. |
| 164 | maximum number of service authorizations reached | The number of maximum simultaneous service authorizations for the MCPTT user has been reached. |
| 165 | group ID for regroup already in use | The group ID proposed by the client for the user/group regroup based on a preconfigured group is already in use. |
| 166 | constituent group is in an emergency call state | The proposed constituent group cannot be added to the temporary group because there is a call on the constituent group that is in an emergency state. |
| 167 | call is not allowed on the preconfigured group | Calls are not allowed on this group that is administratively designated for preconfigured group use only. |
| 168 | alert is not allowed on the preconfigured group | Alerts are not allowed on this group that is administratively designated for preconfigured group use only. |
| 169 | user is not authorised to remove regroup in an emergency state | The MCPTT user is not authorised to remove a regroup that is in an in-progress emergency state. |
| 170 | user not authorised to make a private call transfer request | The MCPTT user is not authorised to make a private call transfer request. |
| 171 | functional alias not allowed to call this particular functional alias | The calling user is not authorised to call this particular functional alias by using this activated functional alias |
| 172 | functional alias not allowed to be called from this functional alias | The called functional alias is not authorised to receive a call from the originating user using this particular Functional Alias |
| xxx | user not authorised to make a private call forwarding request | The MCPTT user is not authorized to use MCPTT private call forwarding |
| xxy | maximum number of allowed forwardings exceeded | The maximum number of allowed call forwardings has been exceeded |
| xxz | call is forwarded | The MCPTT private call that is requested to be established is released, and a new MCPTT private call is originated to the target of the call forwarding |

\* \* \* Next Change \* \* \* \*

#### 6.2.0.1 SIP MESSAGE request

The MCPTT client needs to distinguish between the following SIP MESSAGE requests:

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-location-info+xml" and including an XML body containing a Location root element containing a Configuration element. Such requests are known as "SIP MESSAGE request for location report configuration" in the present document;

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-location-info+xml" and including an XML body containing a Location root element containing a Request element. Such requests are known as "SIP MESSAGE request for location report request" in the present document;

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <request-type> element set to a value of "private-call-call-back-request". Such requests are known as "SIP MESSAGE request for private call call-back request for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <request-type> element set to a value of "private-call-call-back-cancel-request". Such requests are known as "SIP MESSAGE request for private call call-back cancel request for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <response-type> element set to a value of "private-call-call-back-response". Such requests are known as "SIP MESSAGE request for private call call-back response for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <response-type> element set to a value of "private-call-call-back-cancel-response". Such requests are known as "SIP MESSAGE request for private call call-back cancel response for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <request-type> element set to a value of "group-selection-change-request". Such requests are known as "SIP MESSAGE request for group selection change request for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <response-type> element set to a value of "group-selection-change-response". Such requests are known as "SIP MESSAGE request for group selection change response for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <request-type> element set to a value of "remotely-initiated-group-call-request". Such requests are known as "SIP MESSAGE request for remotely initiated group call request for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <response-type> element set to a value of "remotely-initiated-group-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated group call response for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <request-type> element set to a value of "remotely-initiated-private-call-request". Such requests are known as "SIP MESSAGE request for remotely initiated private call request for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <response-type> element set to a value of "remotely-initiated-private-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated private call response for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/mikey" and a CSB-ID containing a CSK-ID. Such requests are known as "SIP MESSAGE request for CSK download for terminating client";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcptt-info> root element containing the <mcptt-Params> element and an <emergency-alert-area-ind> element. Such requests are known as "SIP MESSAGE request for notification of entry into or exit from an emergency alert area";

- SIP MESSAGE requests routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcptt-info> root element containing the <mcptt-Params> element and an <group-geo-area-ind> element. Such requests are known as "SIP MESSAGE request for notification of entry into or exit from a group geographic area";

- SIP MESSAGE requests routed to the MCPTT client with the Request-URI set to a public service identity of the MCPTT user that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body and a <regroup-action> element set to "create". Such requests are known as "SIP MESSAGE request to the MCPTT client to request creation of a regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the MCPTT client with the Request-URI set to a public service identity of the MCPTT user that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body and a <regroup-action> element set to "remove". Such requests are known as "SIP MESSAGE request to the MCPTT client to request removal of a regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE request routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <request-type> element set to a value of "transfer-private-call-request". Such requests are known as "SIP MESSAGE request for transfer private call request for terminating client";

- SIP MESSAGE request routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <responset-type> element set to a value of "transfer-private-call-response". Such requests are known as "SIP MESSAGE request for transfer private call response for terminating client";

- SIP MESSAGE request routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <request-type> element set to a value of "forward-private-call-request". Such requests are known as "SIP MESSAGE request for forwarding private call request for terminating client"; and

- SIP MESSAGE request routed to the MCPTT client as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element containing the <mcptt-Params> element and an <anyExt> element containing the <responset-type> element set to a value of "forward-private-call-response". Such requests are known as "SIP MESSAGE request for forwarding private call response for terminating client".

\* \* \* Next Change \* \* \* \*

#### 6.3.1.3 SIP MESSAGE request

The MCPTT server needs to distinguish between the following SIP MESSAGE request for originations and terminations:

- SIP MESSAGE requests routed to the participating MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] with the Request-URI set to the MBMS public service identity of the participating MCPTT function. Such requests are known as "SIP MESSAGE request for an MBMS listening status update" in the procedures in the present document;

- SIP MESSAGE request routed to the participating MCPTT function as a result of initial filter criteria containing a Content-Type header field set to "application/vnd.3gpp.mcptt-location-info+xml" and including an XML body containing a Location root element containing a Report element. Such requests are known as "SIP MESSAGE request for location reporting" in the present document;

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing a <mcptt-Params> element containing an <emergency-ind> element or an <alert-ind> element. Such requests are known as "SIP MESSAGE request for emergency notification for originating participating MCPTT function" in the procedures in the present document;

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the terminating participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing a <mcptt-Params> element containing an <emergency-ind> element or an <alert-ind> element. Such requests are known as "SIP MESSAGE request for emergency notification for terminating participating MCPTT function" in the procedures in the present document;

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element containing a <mcptt-Params> element containing an <emergency-ind> element or an <alert-ind> element. Such requests are known as "SIP MESSAGE request for emergency notification for controlling MCPTT function" in the procedures in the present document;

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "private-call-call-back-request" or "private-call-call-back-cancel-request", or with the <response-type> element set to a value of "private-call-call-back-response" or "private-call-call-back-cancel-response". Such requests are known as "SIP MESSAGE request for private call call-back for originating participating MCPTT function";

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "private-call-call-back-request" or "private-call-call-back-cancel-request", or with the <response-type> element set to a value of "private-call-call-back-response" or "private-call-call-back-cancel-response".. Such requests are known as "SIP MESSAGE request for private call call-back for terminating participating MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "private-call-call-back-request". Such requests are known as "SIP MESSAGE request for private call call-back request for controlling MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "private-call-call-back-cancel-request". Such requests are known as "SIP MESSAGE request for private call call-back cancel request for controlling MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <response-type> element set to a value of "private-call-call-back-response" or "private-call-call-back-cancel-response". Such requests are known as "SIP MESSAGE request for private call call-back responses for controlling MCPTT function";

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "group-selection-change-request" or with the <response-type> element set to a value of "group-selection-change-response". Such requests are known as "SIP MESSAGE request for group-selection-change for originating participating MCPTT function";

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "group-selection-change-request" or with the <response-type> element set to a value of "group-selection-change -response". Such requests are known as "SIP MESSAGE request for group-selection-change for terminating participating MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "group-selection-change-request". Such requests are known as "SIP MESSAGE request for group selection change request for controlling MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <response-type> element set to a value of "group-selection-change-response". Such requests are known as "SIP MESSAGE request for group selection change response for controlling MCPTT function";

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "remotely-initiated-group-call-request" or with the <response-type> element set to a value of "remotely-initiated-group-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated group call for originating participating MCPTT function";

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "remotely-initiated-group-call-request" or with the <response-type> element set to a value of "remotely-initiated-group-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated group call for terminating participating MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "remotely-initiated-group-call-request". Such requests are known as "SIP MESSAGE request for remotely initiated group call request for controlling MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <response-type> element set to a value of "remotely-initiated-group-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated group call response for controlling MCPTT function"; and

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "remotely-initiated-private-call-request" or with the <response-type> element set to a value of "remotely-initiated-private-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated private call for originating participating MCPTT function";

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "remotely-initiated-private-call-request" or with the <response-type> element set to a value of "remotely-initiated-private-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated private call for terminating participating MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "remotely-initiated-private-call-request". Such requests are known as "SIP MESSAGE request for remotely initiated private call request for controlling MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and including an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <response-type> element set to a value of "remotely-initiated-private-call-response". Such requests are known as "SIP MESSAGE request for remotely initiated private call response for controlling MCPTT function";

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the originating participating MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body, a <regroup-action> element set to "create", and a non-empty <groups-for-regroup> element. Such requests are known as "SIP MESSAGE request to the originating participating MCPTT function to request creation of a group regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the originating participating MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body, a <regroup-action> element set to "create", and a non-empty <users-for-regroup> element. Such requests are known as "SIP MESSAGE request to the originating participating MCPTT function to request creation of a user regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the originating participating MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body and a <regroup-action> element set to "remove". Such requests are known as "SIP MESSAGE request to the originating participating MCPTT function to remove a regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the termination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the participating MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body, a <regroup-action> element set to "create", and a non-empty <groups-for-regroup> element. Such requests are known as "SIP MESSAGE request to the terminating participating MCPTT function to create a group regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the termination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the terminating participating MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body, a <regroup-action> element set to "create"and a non-empty <users-for-regroup> element. Such requests are known as "SIP MESSAGE request to the terminating participating MCPTT function to create a user regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the termination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the terminating participating MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-info+xml MIME body and a <regroup-action> element set to "remove". Such requests are known as "SIP MESSAGE request to the terminating participating MCPTT function to remove a regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the controlling MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body, a <regroup-action> element set to "create", and a non-empty <groups-for-regroup> element. Such requests are known as "SIP MESSAGE request to the controlling MCPTT function to request creation of a group regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the controlling MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body, a <regroup-action> element set to "create", and a non-empty <users-for-regroup> element. Such requests are known as "SIP MESSAGE request to the controlling MCPTT function to request creation of a user regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the controlling MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup +xml MIME body and a <regroup-action> element set to "remove". Such requests are known as "SIP MESSAGE request to the controlling MCPTT function to remove a regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to a non-controlling MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the non-controlling MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body, a <regroup-action> element set to "create", and a non-empty <groups-for-regroup> element. Such requests are known as "SIP MESSAGE request to a non-controlling MCPTT function to request creation of a group regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the non-controlling MCPTT function as a result of processing initial filter criteria at the S-CSCF in accordance with the origination procedures as specified in 3GPP TS 24.229 [4] and the Request-URI is set to a public service identity of the non-controlling MCPTT function that contains a <preconfigured-group> element in an application/vnd.3gpp.mcptt-regroup+xml MIME body and a <regroup-action> element set to "remove". Such requests are known as "SIP MESSAGE request to the non-controlling MCPTT function to remove a group regroup using preconfigured group" in the procedures in the present document;

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "transfer-private-call-request" or with the <response-type> element set to a value of "transfer-private-call-response". Such requests are known as "SIP MESSAGE request for transfer private call for originating participating MCPTT function";

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "transfer-private-call-request" or with the <response-type> element set to a value of "transfer-private-call-response". Such requests are known as "SIP MESSAGE request for transfer private call for terminating participating MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "transfer-private-call-request". Such requests are known as "SIP MESSAGE request for transfer private call request for controlling MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing a <mcpttinfo> root element with a <mcptt-Params> element containing an <anyExt> element with the <response-type> element set to a value of "transfer-private-call-response". Such requests are known as "SIP MESSAGE request for transfer private call response for controlling MCPTT function";

- SIP MESSAGE requests routed to the originating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing an <mcpttinfo> root element with an <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "forward-private-call-request" or with the <response-type> element set to a value of "forward-private-call-response". Such requests are known as "SIP MESSAGE request for forwarding private call for originating participating MCPTT function";

- SIP MESSAGE requests routed to the terminating participating MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the participating MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing an <mcpttinfo> root element with an <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "forward-private-call-request" or with the <response-type> element set to a value of "forward-private-call-response". Such requests are known as "SIP MESSAGE request for forwarding private call for terminating participating MCPTT function";

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing an <mcpttinfo> root element with an <mcptt-Params> element containing an <anyExt> element with the <request-type> element set to a value of "forward-private-call-request". Such requests are known as "SIP MESSAGE request for forwarding private call request for controlling MCPTT function"; and

- SIP MESSAGE requests routed to the controlling MCPTT function as a result of initial filter criteria with the Request-URI set to the public service identity of the controlling MCPTT function and containing a Content-Type header field set to "application/vnd.3gpp.mcptt-info+xml" and includes an XML body containing an <mcpttinfo> root element with an <mcptt-Params> element containing an <anyExt> element with the <response-type> element set to a value of "forward-private-call-response". Such requests are known as "SIP MESSAGE request for forwarding private call response for controlling MCPTT function".

\* \* \* Next Change \* \* \* \*

#### 6.3.2.x Handling of the no answer timer (TNP1)

When the terminating participating MCPTT function receives a SIP INVITE request to initiate a private call:

1) if the <allow-call-forwarding> element exists in the MCPTT user profile document, and the value is set to "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

2) if the <call-forwarding-on> element exists in the MCPTT user profile document, and the value is set to "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

3) if the <call-forwarding-condition> element exists and has a value of "no-answer" as specified in 3GPP TS 24.484 [50] set; and

4) then the terminating participating MCPTT function shall start timer TNP1 (call forwarding no answer timer) with a timer value as described in subclause B.2.x, prior to sending out a SIP INVITE request inviting the called MCPTT user to a private call.

When the terminating participating MCPTT function receives a SIP 200 (OK) response to the SIP INVITE request, from the called MCPTT user before expiry of TNP1 (call forwarding no answer timer), then the terminating participating MCPTT function shall stop timer TNP1 (call forwarding no answer timer) and send a SIP 200 (OK) response to the controlling MCPTT function.

After expiry of timer TNP1 (call forwarding no answer timer) the terminating participating MCPTT function:

1) if the received SIP INVITE request contains a <forwarding-other-conditions-list> element with one or more <entry> elements shall reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "xxy maximum number of allowed forwardings exceeded" in a Warning header field as specified in subclause 4.4 and shall skip the rest of the steps;

2) shall generate and send a SIP CANCEL request to the called MCPTT user, according to IETF RFC3261 [24], to cancel the SIP dialog for which the no answer timer has been expired;

3) shall reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 480 (Temporarily Unavailable) response including warning text set to "xxz call is forwarded" in a Warning header field as specified in subclause 4.4;

4) shall generate a SIP MESSAGE request as described in subclause 6.3.2.y to trigger the call forwarding of a private call and shall include in the application/vnd.3gpp.mcptt-info+xml MIME body;

a) shall set the <forwarding-reason> element set to a value of "no-answer"; and

5) shall send the SIP MESSAGE request as specified to 3GPP TS 24.229 [4].

Upon receipt of SIP 2xx responses to the outgoing SIP MESSAGE requests, the controlling MCPTT function shall follow the procedures specified in 3GPP TS 24.229 [4] and shall skip the rest of the steps.

\* \* \* Next Change \* \* \* \*

#### 6.3.2.y Generating a SIP MESSAGE request for call forwarding of a private call

This subclause is referenced from other procedures.

This subclause describes the procedures for generating a SIP MESSAGE request for call forwarding of a private call.

The participating MCPTT function

1) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33] with the following clarifications;

a) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP MESSAGE request;

b) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

c) shall include an application/vnd.3gpp.mcptt-info+xml MIME body as specified in clause F.1 with the <mcpttinfo> element containing the <mcptt-Params> element with an <anyExt> element containing:

i) the <request-type> element set to a value of "forward-private-call-request";

ii) the <mcptt-called-party-id> element set to the <call-forwarding-target> element in the MCPTT user profile document in 3GPP TS 24.484 [50]); and

iii) if the <forward-to-functional-alias> element of the <ruleset> element is present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the participating MCPTT function with the value "true", then with the <call-to-functional-alias-ind> set to "true"; otherwise,with the <call-to-functional-alias-ind> set to "false"; and

NOTE: For a call forwarding to a MCPTT ID the value of the <mcptt-called-party-id> is the MCPTT ID of the target user, while for call forwarding to a functional alias the value is the functional alias of the target user.

e) shall insert in the SIP MESSAGE request a MIME resource-lists body with the MCPTT ID of the forwarded MCPTT user, according to the rules and procedures of IETF RFC 5366 [20];

2) shall set the Request-URI of the outgoing SIP MESSAGE request to the public service identity of the controlling MCPTT function associated with the call transfer service for the requesting MCPTT user;

3) shall include a P-Asserted-Identity header field set to the public service identity of participating MCPTT function;

4) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

5) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6]; and

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), into the P-Asserted-Service header field of the outgoing SIP MESSAGE request.

\* \* \* Next Change \* \* \* \*

###### 11.1.1.2.1.1 Client originating procedures

Upon receiving a request from an MCPTT user to establish an MCPTT private call, or upon accepting a request to perform a private call transfer or a private call forwarding, the MCPTT client shall generate an initial SIP INVITE request by following the UE originating session procedures specified in 3GPP TS 24.229 [4], with the clarifications given below.

The MCPTT client:

1) shall set the Request-URI of the SIP INVITE request to a public service identity of the participating MCPTT function serving the MCPTT user;

2) if the MCPTT user has requested the origination of a first-to-answer call, if the <allow-request-first-to-answer-call> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) or is set to a value of "false", the MCPTT client shall inform the MCPTT user and shall exit this procedure;

3) if the MCPTT user has requested the origination of an MCPTT emergency private call or is originating an MCPTT private call and the MCPTT emergency state is already set, the MCPTT client:

a) shall, if this is an authorised request for an MCPTT emergency private call as determined by the procedures of subclause 6.2.8.3.1.1, comply with the procedures in subclause 6.2.8.3.2; and

b) should, if this is an unauthorised request for an MCPTT emergency private call as determined in step a) above, indicate to the MCPTT user that they are not authorised to initiate an MCPTT emergency private call;

4) may include a P-Preferred-Identity header field in the SIP INVITE request containing a public user identity as specified in 3GPP TS 24.229 [4];

5) shall include the g.3gpp.mcptt media feature tag and the g.3gpp.icsi-ref media feature tag with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" in the Contact header field of the SIP INVITE request according to IETF RFC 3840 [16];

6) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

7) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP INVITE request;

8) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref contain with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

9) for the establishment of a private call shall insert in the SIP INVITE request a MIME resource-lists body with the MCPTT ID of the invited MCPTT user, according to rules and procedures of IETF RFC 5366 [20];

10) for the establishment of a first-to-answer call shall insert in the SIP INVITE request according to rules and procedures of IETF RFC 5366 [20] a MIME resource-lists body with:

a) the MCPTT IDs of the potential target MCPTT users; or

b) the URI of the functional alias to be called;

NOTE 1: The MCPTT client indicates whether a list of MCPTT IDs or a functional alias is to be called as specified in step 15) b).

11) if an end-to-end security context needs to be established and if the MCPTT user is initiating a private call then:

a) if necessary, shall instruct the key management client to request keying material from the key management server as described in 3GPP TS 33.180 [78];

b) shall use the keying material to generate a PCK as described in 3GPP TS 33.180 [78];

c) shall use the PCK to generate a PCK-ID with the four most significant bits set to "0001" to indicate that the purpose of the PCK is to protect private call communications and with the remaining twenty eight bits being randomly generated as described in 3GPP TS 33.180 [78];

d) shall encrypt the PCK to a UID associated to the MCPTT client using the MCPTT ID and KMS URI of the invited user as determined by the procedures of subclause 6.2.8.3.9 and a time related parameter as described in 3GPP TS 33.180 [78];

e) shall generate a MIKEY-SAKKE I\_MESSAGE using the encapsulated PCK and PCK-ID as specified in 3GPP TS 33.180 [78]; and

g) shall add the MCPTT ID of the originating MCPTT to the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [78]; and

f) shall sign the MIKEY-SAKKE I\_MESSAGE using the originating MCPTT user's signing key provided in the keying material together with a time related parameter, and add this to the MIKEY-SAKKE payload, as described in 3GPP TS 33.180 [78];

12) shall include an SDP offer according to 3GPP TS 24.229 [4] with the clarification given in subclause 6.2.1 and with a media stream of the offered media-floor control entity;

13) if implicit floor control is required, shall comply with the conditions specified in subclause 6.4 and:

a) if the <allow-location-info-when-talking> element of the <ruleset> element of the MCPTT user profile document identified by the MCPTT ID of the calling MCPTT user (see the MCPTT user profile document in 3GPP TS 24.484 [50]) is set to a value of "true"; and

b) if location information has not yet been included in the SIP re-INVITE request;

then shall include an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Report> element included in the <location-info> root element;

14) if the MCPTT user is initiating a private call then:

a) if force of automatic commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include in the SIP INVITE request a Priv-Answer-Mode header field with the value "Auto" according to the rules and procedures of IETF RFC 5373 [18];

b) if force of automatic commencement mode at the invited MCPTT client is not requested by the MCPTT user and:

i) if automatic commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include in the SIP INVITE request an Answer-Mode header field with the value "Auto" according to the rules and procedures of IETF RFC 5373 [18]; and

ii) if manual commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include in the SIP INVITE request an Answer-Mode header field with the value "Manual" according to the rules and procedures of IETF RFC 5373 [18]; and

c) shall contain an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element:

i) with the <session-type> element set to a value of "private"; and

ii) if the MCPTT client needs to include an active functional alias in the initial SIP INVITE request, with the <functional-alias-URI> set to the URI of the used functional alias;

NOTE 2: The MCPTT client learns the functional aliases that are activated for an MCPTT ID from procedures specified in subclause 9A.2.1.3.

14A) if the MCPTT client initiates the private call upon accepting a request to perform a private call transfer then:

a) shall include in the SIP INVITE request a Priv-Answer-Mode header field with the same value as in the MCPTT call to be transferred according to the rules and procedures of IETF RFC 5373 [18]; and

b) shall contain an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element:

i) with the <session-type> element set to a value of "private";

ii) if the MCPTT client needs to include an active functional alias in the initial SIP INVITE request, with the <functional-alias-URI> set to the URI of the used functional alias; and

iii) with the <call-transfer-ind> element set to "true";

14B) if the MCPTT client initiates the private call upon accepting a request to perform a private call forwarding then:

a) shall include in the SIP INVITE request a Priv-Answer-Mode header field with the same value as in the MCPTT call to be forwarded according to the rules and procedures of IETF RFC 5373 [18];

b) if the "SIP MESSAGE request for forwarding private call request for terminating client" contained a <forwarding-reason> with a value of "immediate", shall append an entry containing the MCPTT ID of the forwarded MCPTT user to the <forwarding-immediate-list>;

c) if the "SIP MESSAGE request for forwarding private call request for terminating client" contained a <forwarding-reason> with a value of "no-answer", or "manual-input", append an entry containing the MCPTT ID of the forwarded MCPTT user to the <forwarding-other-list>;

d) shall cache both the <forwarding-immediate-list> and the <forwarding-other-list> until a final response for the SIP INVITE is received; and

e) shall include an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with:

i) the <session-type> element set to a value of "private";

ii) if the MCPTT client needs to include an active functional alias in the initial SIP INVITE request, the <functional-alias-URI> set to the URI of the used functional alias;

iii) the <call-forwarding-ind> element set to "true";

iv) the <forwarding-immediate-list> element; and

v) the <forwarding-other-list> element.

15) if the MCPTT user is initiating a first-to-answer call shall contain an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element;

a) with the <session-type> element set to a value of "first-to-answer";

b) with the <call-to-functional-alias-ind> set to "true" if the MCPTT client is aware of active functional aliases and an active functional alias is to be called or "false" otherwise; and

c) if the MCPTT client needs to include an active functional alias in the initial SIP INVITE request, with the <functional-alias-URI> set to the URI of the used functional alias;

NOTE 3: The MCPTT client learns the functional aliases that are activated for an MCPTT ID from procedures specified in subclause 9A.2.1.3.

16) if the MCPTT emergency private call state is set to either "MEPC 2: emergency-pc-requested" or "MEPC 3: emergency-pc-granted" or the MCPTT emergency private priority state for this private call is set to "MEPP 2: in-progress", the MCPTT client shall comply with the procedures in subclause 6.2.8.3.3; and

17) shall send SIP INVITE request towards the MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a SIP 183(Session Progress) response to the SIP INVITE request the MCPTT client:

1) may indicate the progress of the session establishment to the inviting MCPTT user.

Upon receiving a SIP 200 (OK) response to the SIP INVITE request the MCPTT client:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) if the sent SIP INVITE request was for the origination of a first-to-answer call and the SDP answer contained in the received SIP 200 (OK) response contains an "a=key-mgmt" attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I\_MESSAGE:

a) shall extract the MCPTT ID of the sender of the SIP 200 (OK) response from the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [78];

b) shall convert the MCPTT ID to a UID as described in 3GPP TS 33.180 [78];

c) shall use the UID to validate the signature of the MIKEY-SAKKE I\_MESSAGE as described in 3GPP TS 33.180 [78];

d) if authentication verification of the MIKEY-SAKKE I\_MESSAGE fails:

i) if the sent SIP INVITE request was a request for an MCPTT emergency private call and if the MCPTT emergency private call state is set to "MEPC 2: emergency-pc-requested, the MCPTT client:

A) shall set the MCPTT emergency private call state to "MEPC 1: emergency-pc-capable";

B) if the MCPTT emergency private priority state of the private call is "MEPP 3: confirm-pending" shall set the MCPTT emergency private priority state of the private call to "MEPP 1: no-emergency"; and

C) if the sent SIP request for an MCPTT emergency private call contained an application/vnd.3gpp.mcptt-info+xml MIME body with an <alert-ind> element set to a value of "true", shall set the MCPTT private emergency alert state to "MPEA 1: no-alert". and

ii) shall release the session as specified in the procedures of subclause 11.1.3.1.1.1 with the following clarifications:

A) shall include in the SIP BYE request an application/vnd.3gpp.mcptt-info+xml MIME body containing a <release-reason> element set to a value of "authentication of the MIKEY-SAKE I\_MESSAGE failed"; and

B) shall skip the remaining steps in the present subclause; and

e) if the signature of the MIKEY-SAKKE I\_MESSAGE was successfully validated:

i) shall extract and decrypt the encapsulated PCK using the originating user's (KMS provisioned) UID key as described in 3GPP TS 33.180 [78]; and

ii) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.180 [46];

NOTE 4: With the PCK successfully shared between the originating MCPTT client and the terminating MCPTT client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

3) if the MCPTT emergency private call state is set to "MEPC 2: emergency-pc-requested" or "MEPC 3: emergency-pc-granted", shall perform the actions specified in subclause 6.2.8.3.4; and

3A) may notify the answer state to the user (i.e. "Unconfirmed" or "Confirmed") if received in the P-Answer-State header field; and

4) shall notify the user that the call has been successfully established.

On receiving a SIP 4xx response, a SIP 5xx response or a SIP 6xx response to the SIP INVITE request:

1) if the MCPTT emergency private call state is set to "MEPC 2: emergency-pc-requested"; or

2) if the MCPTT emergency private call state is set to "MEPC 3: emergency-pc-granted";

the MCPTT client shall perform the actions specified in subclause 6.2.8.3.5.

On receiving a SIP INFO request where the Request-URI contains an MCPTT session ID identifying an ongoing session, the MCPTT client shall follow the actions specified in subclause 6.2.8.3.7.

\* \* \* Next Change \* \* \* \*

###### 11.1.1.2.1.2 Client terminating procedures

Upon receipt of an initial SIP INVITE request, the MCPTT client shall follow the procedures for termination of multimedia sessions in the IM CN subsystem as specified in 3GPP TS 24.229 [4] with the clarifications below.

Editor’s Note: [eMONASTERY2, CR 0709] If and how the MCPTT client handles forwarding of private MCPTT calls based on manual user input for automatic commencement is FFS.

The MCPTT client:

1) may reject the SIP INVITE request if any of the following conditions are met:

a) MCPTT client is already occupied in another session and the number of simultaneous sessions exceeds <MaxCall>, the maximum simultaneous MCPTT session for private call, as specified in TS 24.484 [50];

b) MCPTT client does not have enough resources to handle the call; or

c) any other reason outside the scope of this specification;

otherwise, continue with the rest of the steps.

NOTE 1: If the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <emergency-ind> element set to a value of "true", the participating MCPTT function can choose to accept the request.

2) if the SIP INVITE request is rejected in step 1), shall respond toward participating MCPTT function either with appropriate reject code as specified in 3GPP TS 24.229 [4] and warning texts as specified in subclause 4.4.2 or with SIP 480 (Temporarily unavailable) response not including warning texts if the user is authorised to restrict the reason for failure according to <allow-failure-restriction> as specified in 3GPP TS 24.484 [50] and skip the rest of the steps of this subclause;

3) if the SIP INVITE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <emergency-ind> element set to a value of "true":

a) should display to the MCPTT user an indication that this is a SIP INVITE request for an MCPTT emergency private call and:

i) should display the MCPTT ID of the originator of the MCPTT emergency private call contained in the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body; and

ii) if the <alert-ind> element is set to "true", should display to the MCPTT user an indication of the MCPTT emergency alert and associated information; and

b) if the session was established with a <session-type> of "first-to-answer"; shall temporarily save the current value of the MCPTT emergency private priority (MEPP) state;

NOTE 2: The current value of the MCPTT emergency private priority (MEPP) state needs to be temporarily saved because the MCPTT client may not be the one selected to terminate the first to answer emergency private call. Hence, the MCPTT client needs to be able to restore the MCPTT emergency private priority (MEPP) state to the saved value.

c) shall set the MCPTT emergency private priority state to "MEPP 2: in-progress" for this private call;

4) if the SDP offer of the SIP INVITE request contains an "a=key-mgmt" attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I\_MESSAGE:

a) shall extract the MCPTT ID of the originating MCPTT from the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [78];

b) shall convert the MCPTT ID to a UID as described in 3GPP TS 33.180 [78];

c) shall use the UID to validate the signature of the MIKEY-SAKKE I\_MESSAGE as described in 3GPP TS 33.180 [78];

d) if authentication verification of the MIKEY-SAKKE I\_MESSAGE fails, shall reject the SIP INVITE request with a SIP 488 (Not Acceptable Here) response as specified in IETF RFC 4567 [47], and include warning text set to "136 authentication of the MIKEY-SAKE I\_MESSAGE failed" in a Warning header field as specified in subclause 4.4; and

e) if the signature of the MIKEY-SAKKE I\_MESSAGE was successfully validated:

i) shall extract and decrypt the encapsulated PCK using the terminating user's (KMS provisioned) UID key as described in 3GPP TS 33.180 [78]; and

ii) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.180 [78];

NOTE 3: With the PCK successfully shared between the originating MCPTT client and the terminating MCPTT client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

5) if an end-to-end security context needs to be established and if the <session-type> in the application/vnd.3gpp.mcptt-info+xml MIME body of the incoming SIP INVITE request is set to "first-to-answer" then:

a) if necessary, shall instruct the key management client to request keying material from the key management server as described in 3GPP TS 33.180 [78];

b) shall use the keying material to generate a PCK as described in 3GPP TS 33.180 [78];

c) shall use the PCK to generate a PCK-ID with the four most significant bits set to "0001" to indicate that the purpose of the PCK is to protect private call communications and with the remaining twenty eight bits being randomly generated as described in 3GPP TS 33.180 [78];

d) shall encrypt the PCK to a UID associated to the MCPTT client using the MCPTT ID and KMS URI of the originator of the SIP INVITE request as determined by the procedures of subclause 6.2.8.3.9 and a time related parameter as described in 3GPP TS 33.180 [78];

e) shall generate a MIKEY-SAKKE I\_MESSAGE using the encapsulated PCK and PCK-ID as specified in 3GPP TS 33.180 [78];

f) shall add the MCPTT ID of the MCPTT user to the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [78]; and

NOTE 4: The initiator of the MIKEY-SAKKE I\_MESSAGE is in this case the terminating client from the perspective of the call.

g) shall sign the MIKEY-SAKKE I\_MESSAGE using the MCPTT user's signing key provided in the keying material together with a time related parameter, and add this to the MIKEY-SAKKE payload, as described in 3GPP TS 33.180 [78];

6) may check if a Resource-Priority header field is included in the incoming SIP INVITE request and may perform further actions outside the scope of this specification to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

7) may display to the MCPTT user the MCPTT ID of the inviting MCPTT user;

7A) may display to the MCPTT user the functional alias of the inviting MCPTT user, if provided;

8) if the <session-type> in the application/vnd.3gpp.mcptt-info+xml MIME body of the incoming SIP INVITE request is set to "first-to-answer":

a) shall notify the user of the incoming call;

b) shall not forward the first-to-answer call;

c) if the MCPTT user is busy on another call, shall send a SIP 486 (Busy Here) to the SIP INVITE request according to 3GPP TS 24.229 [4] and not continue with any further steps in this subclause; and

d) if the MCPTT user does not answer the call within a time decided by the client implementation, the MCPTT client shall send a SIP 480 (Temporarily Unavailable) to the SIP INVITE request according to 3GPP TS 24.229 [4] and not continue with any further steps in this subclause;

NOTE 5: In the conditions below, as the SIP layer implements the actions for commencement mode, it is assumed that the Answer-Mode or Priv-Answer-Mode header fields are set correctly in line with the setting of the <session-type> in the application/vnd.3gpp.mcptt-info+xml MIME body of the incoming SIP INVITE request.

9) shall perform the automatic commencement procedures specified in subclause 6.2.3.1.1 if one of the following conditions are met:

a) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode;

b) SIP INVITE request contains an Answer-Mode header field with the value "Auto" and the MCPTT service setting at the invited MCPTT client for answering the call is set to manual commencement mode, yet the invited MCPTT client is willing to answer the call with automatic commencement mode; or

c) SIP INVITE request contains a Priv-Answer-Mode header field with the value of "Auto"; and

10) shall perform the manual commencement procedures specified in subclause 6.2.3.2.1 if either of the following conditions are met:

a) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is set to manual commencement mode;

b) SIP INVITE request contains an Answer-Mode header field with the value "Manual" and the MCPTT service setting at the invited MCPTT client for answering the call is set to automatic commencement mode, yet the invited MCPTT client allows the call to be answered with manual commencement mode; or

c) SIP INVITE request contains a Priv-Answer-Mode header field with the value of "Manual".

Upon receiving the SIP CANCEL request cancelling a SIP INVITE request for which a dialog exists at the MCPTT client and a SIP 200 (OK) response has not yet been sent to the SIP INVITE request then the MCPTT client:

1) if the session was established with a <session-type> of "first-to-answer", may notify the MCPTT user of the cancellation of the call;

2) if a temporary MCPTT emergency private priority (MEPP) state value was saved in step 3) b) above:

a) shall restore the MCPTT emergency private priority (MEPP) state to the temporary MCPTT emergency private priority (MEPP) state value; and

b) shall discard the temporary MCPTT emergency private priority (MEPP) state value;

3) shall send a SIP 200 (OK) response to the SIP CANCEL request according to 3GPP TS 24.229 [4]; and

4) shall send a SIP 487 (Request Terminated) response to the SIP INVITE request according to 3GPP TS 24.229 [4].

Upon receiving a SIP BYE request for an established dialog, the MCPTT client:

1) if the session was established with a <session-type> of "first-to-answer" and:

a) if the received SIP BYE request contains an application/vnd.3gpp.mcptt-info+xml MIME body with the <mcpttinfo> element containing the <mcptt-Params> element with the <release-reason> element set to a value of "not selected for call" or "authentication of the MIKEY-SAKE I\_MESSAGE failed":

i) if a temporary MCPTT emergency private priority (MEPP) state value was saved in step 3) b) above, shall restore the MCPTT emergency private priority (MEPP) state to the temporary MCPTT emergency private priority (MEPP) state value saved in step 3) b) above; and

b) may notify the MCPTT user of the release of the call; and

2) shall follow the procedures in subclause 11.1.4.2.

NOTE 6: The above conditions for SIP CANCEL and SIP BYE cover the case for a first-to-answer call where the MCPTT server has already established the private call with another MCPTT client and needs to immediately cancel or release the dialogs with other MCPTT clients.

\* \* \* Next Change \* \* \* \*

###### 11.1.1.2.2.1 Client originating procedures

Upon receiving a request from an MCPTT user to establish an MCPTT private call within a pre-established session, or upon accepting a request to complete a private call transfer or a private call forwarding within a pre-established session, the MCPTT client shall generate a SIP REFER request outside a dialog in accordance with the procedures specified in 3GPP TS 24.229 [4], IETF RFC 4488 [22] and IETF RFC 3515 [25] as updated by IETF RFC 6665 [26] and IETF RFC 7647 [27], with the clarifications given below.

If the MCPTT user is initiating a private call and an end-to-end security context needs to be established the MCPTT client:

1) if necessary, shall instruct the key management client to request keying material from the key management server as described in 3GPP TS 33.180 [78];

2) shall use the keying material to generate a PCK as described in 3GPP TS 33.180 [78];

3) shall use the PCK to generate a PCK-ID with the four most significant bits set to "0001" to indicate that the purpose of the PCK is to protect private call communications and with the remaining twenty eight bits being randomly generated as described in 3GPP TS 33.180 [78];

4) shall encrypt the PCK to a UID associated to the MCPTT client using the MCPTT ID and KMS URI of the invited user as determined by the procedures of subclause 6.2.8.3.9 and a time related parameter as described in 3GPP TS 33.180 [78];

5) shall generate a MIKEY-SAKKE I\_MESSAGE using the encapsulated PCK and PCK-ID as specified in 3GPP TS 33.180 [78];

6) shall add the MCPTT ID of the originating MCPTT to the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [78]; and

7) shall sign the MIKEY-SAKKE I\_MESSAGE using the originating MCPTT user's signing key provided in the keying material together with a time related parameter, and add this to the MIKEY-SAKKE payload, as described in 3GPP TS 33.180 [78].

The MCPTT client populates the SIP REFER request as follows:

1) shall include the Request-URI set to the public service identity identifying the pre-established session on the MCPTT server serving the MCPTT user;

2) shall include the Refer-Sub header field with value "false" according to rules and procedures of IETF RFC 4488 [22];

3) shall include the Supported header field with value "norefersub" according to rules and procedures of IETF RFC 4488 [22];

4) shall include the option tag "multiple-refer" in the Require header field;

5) may include a P-Preferred-Identity header field in the SIP REFER request containing a public user identity as specified in 3GPP TS 24.229 [4];

6) shall include a P-Preferred-Service header field set to the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), according to IETF RFC 6050 [9];

7) shall set the Refer-To header field of the SIP REFER request as specified in IETF RFC 3515 [25] with a Content-ID ("cid") Uniform Resource Locator (URL) as specified in IETF RFC 2392 [62] that points to an application/resource-lists MIME body as specified in IETF RFC 5366 [20], and with the Content-ID header field set to this "cid" URL;

8) for the initiation of a private call, shall include in the application/resource-lists MIME body a single <entry> element containing a "uri" attribute set to the MCPTT ID of the called user, extended with the following URI header fields:

NOTE 1: Characters that are not formatted as ASCII characters are escaped in the following parameters in the headers portion of the SIP URI.

a) if force of automatic commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include a Priv-Answer-Mode header field with the value "Auto" according to the rules and procedures of IETF RFC 5373 [18];

b) if force of automatic commencement mode at the invited MCPTT client is not requested by the MCPTT user and:

i) if automatic commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include an Answer-Mode header field with the value "Automatic" according to rules and procedures of IETF RFC 5373 [18]; and

ii) if manual commencement mode at the invited MCPTT client is requested by the MCPTT user, shall include an Answer-Mode header field with the value "Manual" according to rules and procedures of IETF RFC 5373 [18]; and

c) shall include in an hname "body" parameter:

i) if the SDP parameters of the pre-established session do not contain a media-level section of a media-floor control entity or if end-to-end security is required for the private call, an application/sdp MIME body containing the SDP parameters of the pre-established session according to 3GPP TS 24.229 [4] with the clarifications given in subclause 6.2.1. If implicit floor control is required and the pre-established session was not established with an implicit floor request, then the application/sdp MIME body shall contain an implicit floor request as specified in subclause 6.4; and

ii) an application/vnd.3gpp.mcptt-info MIME body:

A) with the <session-type> element set to "private";

B) if the MCPTT client needs to include an active functional alias in the SIP REFER request, with the <functional-alias-URI> set to the URI of the used functional alias;

C) if the MCPTT client initiates the private call upon accepting a request to perform a private call transfer then shall include the <call-transfer-ind> set to "true"; and

D) if the MCPTT client initiates the private call upon accepting a request to perform a private call forwarding then:

x1) if the "SIP MESSAGE request for forwarding private call request for terminating client" contained a <forwarding.reason> with a value of "immediate", shall append an entry containing the MCPTT ID of the forwarded MCPTT user to the <forwarding-immediate-list>;

x2) if the "SIP MESSAGE request for forwarding private call request for terminating client" contained a <forwarding.reason> with a value of "no-answer", or "manual-input", shall append an entry containing the MCPTT ID of the forwarded MCPTT user to the <forwarding-other-list>;

x3) shall cache both the <forwarding-immediate-list> and the <forwarding-other-list> until a final response for the SIP REFER is received;

x4) shall include the <call-forwarding-ind> set to "true";

x5) shall include the <forwarding-immediate-list> element; and

x6) shall include the <forwarding-other-list> element;

NOTE 2: The MCPTT client learns the functional aliases that are activated for an MCPTT ID from procedures specified in subclause 9A.2.1.3.

9) for an initiation of a first-to-answer call, shall include in the application/resource-lists MIME body an <entry> element for each of the targeted MCPTT users, with each <entry> element containing a "uri" attribute set to the MCPTT ID of the targeted user, extended with hname "body" parameter in the headers portion of the SIP URI containing:

NOTE 3: Characters that are not formatted as ASCII characters are escaped in the following parameters in the headers portion of the SIP URI.

a) if the SDP parameters of the pre-established session do not contain a media-level section of a media-floor control entity, an application/sdp MIME body containing the SDP parameters of the pre-established session according to 3GPP TS 24.229 [4] with the clarification given in subclause 6.2.1. If implicit floor control is required and the pre-established session was not established with an implicit floor request, then the application/sdp MIME body shall contain an implicit floor request as specified in subclause 6.4; and

b) an application/vnd.3gpp.mcptt-info MIME body with the <session-type> element set to "first-to-answer";

10) if the MCPTT user has requested the origination of an MCPTT emergency private call or is originating an MCPTT private call and the MCPTT emergency state is already set, the MCPTT client:

a) if this is an authorised request for an MCPTT emergency private call as determined by the procedures of subclause 6.2.8.3.1.1, shall comply with the procedures in subclause 6.2.8.3.2; and

b) if this is an unauthorised request for an MCPTT emergency private call as determined in step a) above, should indicate to the MCPTT user that they are not authorised to initiate an MCPTT emergency private call;

11) if the MCPTT emergency private priority state for this call is set to "MEPP 2: in-progress", the MCPTT client shall comply with the procedures in subclause 6.2.8.3.3;

12) shall include a Target-Dialog header field as specified in IETF RFC 4538 [23] identifying the pre-established session; and

13) if:

a) implicit floor control is required;

b) the pre-established session was not established with an implicit floor request; and

c) location information has not yet been included in the SIP REFER request;

then shall include an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Report> element included in the <location-info> root element.

The MCPTT client shall send the SIP REFER request towards the MCPTT server according to 3GPP TS 24.229 [4].

Upon receiving a final SIP 2xx response to the SIP REFER request the MCPTT client shall interact with media plane as specified in 3GPP TS 24.380 [5].

On receiving a SIP 4xx response, SIP 5xx response or a SIP 6xx response to the SIP REFER request for an MCPTT emergency private call:

1) if the MCPTT emergency private call state is set to "MEPC 2: emergency-pc-requested", the MCPTT client shall perform the actions specified in subclause 6.2.8.3.5; and

2) shall skip the remaining steps.

Upon receipt of a SIP re-INVITE request within the pre-established session targeted by the sent SIP REFER request, the MCPTT client:

1) if the sent SIP REFER request was a request to originate a first-to-answer call:

a) if the received SIP re-INVITE request contains an SDP offer including an a=key-mgmt attribute field with a "mikey" attribute value containing a MIKEY-SAKKE I\_MESSAGE:

i) shall extract the MCPTT ID of the sender of the SIP 200 (OK) response from the initiator field (IDRi) of the I\_MESSAGE as described in 3GPP TS 33.180 [78];

ii) shall convert the MCPTT ID to a UID as described in 3GPP TS 33.180 [78];

iii) shall use the UID to validate the signature of the MIKEY-SAKKE I\_MESSAGE as described in 3GPP TS 33.180 [78];

iv) if authentication verification of the MIKEY-SAKKE I\_MESSAGE fails:

A) shall set the MCPTT emergency private call state to "MEPC 1: emergency-pc-capable";

B) if the MCPTT emergency private priority state of the private call is "MEPP 3: confirm-pending" shall set the MCPTT emergency private priority state of the private call to "MEPP 1: no-emergency";

C) if the sent SIP request for an MCPTT emergency private call contained an application/vnd.3gpp.mcptt-info+xml MIME body with an <alert-ind> element set to a value of "true", shall set the MCPTT private emergency alert state to "MPEA 1: no-alert"; and

D) shall release the session as specified in the procedures of subclause 11.1.3.1.2.1 with the following clarifications:

I) shall include in the SIP BYE request an application/vnd.3gpp.mcptt-info+xml MIME body containing a <release-reason> element set to a value of "authentication of the MIKEY-SAKE I\_MESSAGE failed"; and

II) shall skip the remaining steps in the present subclause; and

v) if the signature of the MIKEY-SAKKE I\_MESSAGE was successfully validated:

A) shall extract and decrypt the encapsulated PCK using the originating user's (KMS provisioned) UID key as described in 3GPP TS 33.180 [78]; and

B) shall extract the PCK-ID, from the payload as specified in 3GPP TS 33.180 [78];

NOTE 4: With the PCK successfully shared between the originating MCPTT client and the terminating MCPTT client, both clients are able to use SRTP/SRTCP to create an end-to-end secure session.

2) if the sent SIP REFER request was a request for an MCPTT emergency private call:

a) if the MCPTT emergency private call state is set to "MEPC 2: emergency-pc-requested" or "MEPC 3: emergency-pc-granted":

i) shall set the MCPTT emergency private priority state of the call to "MEPP 2: in-progress" if it was not already set;

ii) shall set the MCPTT emergency private call state to "MEPC 3: emergency-pc-granted"; and

iii) if the MCPTT private emergency alert state is set to "MPEA 2: emergency-alert-confirm-pending" and:

A) if the SIP re-INVITE request contains an <alert-ind> element set to a value of "true" or does not contain an <alert-ind> element, shall set the MCPTT private emergency alert state to " MPEA 3: emergency-alert-initiated "; or

B) if the SIP re-INVITE request contains an <alert-ind> element set to a value of "false", shall set the MCPTT private emergency alert state to "MPEA 1: no-alert ";

3) shall check if a Resource-Priority header field is included in the incoming SIP re-INVITE request and may perform further actions outside the scope of this specification to act upon an included Resource-Priority header field as specified in 3GPP TS 24.229 [4];

4) shall accept the SIP re-INVITE request and generate a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4];

5) shall include an SDP answer in the SIP 200 (OK) response to the SDP offer in the incoming SIP re-INVITE request according to 3GPP TS 24.229 [4], based upon the parameters already negotiated for the pre-established session; and

6) shall send the SIP 200 (OK) response towards the participating MCPTT function according to rules and procedures of 3GPP TS 24.229 [4].

On call release by interaction with the media plane as specified in subclause 9.2.2 of 3GPP TS 24.380 [5] if the sent SIP REFER request was a request for an MCPTT emergency private call, the MCPTT client shall perform the procedures specified in subclause 6.2.8.1.18.

\* \* \* Next Change \* \* \* \*

###### 11.1.1.2.2.2 Client terminating procedures

The MCPTT client shall follow the procedures for termination of multimedia sessions as specified in subclause 11.1.1.2.1.2 with the following clarifications:

Editor’s Note: [eMONASTERY2, CR 0709] How the MCPTT client handles interactions with the media plane for forwarding of private MCPTT calls based on manual user input is FFS.

1) if the MCPTT client is targeted for a new MCPTT emergency private call, the MCPTT client receives a SIP INVITE with an application/vnd.3gpp.mcptt-info+xml MIME body with an <emergency-ind> set to a value of "true"; or

2) if the MCPTT client is targeted for a new normal priority MCPTT private call, the MCPTT client receives a SIP re-INVITE request rather than a SIP INVITE request.

\* \* \* Next Change \* \* \* \*

###### 11.1.1.3.1.1 On-demand private call and first-to-answer call

Upon receipt of a "SIP INVITE request for originating participating MCPTT function" containing an application/vnd.3gpp.mcptt-info+xml MIME body with the <session-type> element set to a value of "private" or "first-to-answer", the participating MCPTT function:

1) may reject the SIP INVITE request depending on the value of the Resource-Priority header field if the Resource-Priority header field is included in the received SIP INVITE request according to rules and procedures specified in IETF RFC 4412 [29] and shall not continue with the rest of the steps;

2) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 500 (Server Internal Error) response. The participating MCPTT function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [24] and shall not continue with the rest of the steps;

NOTE 1: If the received SIP INVITE request contains an emergency indication set to a value of "true", the participating MCPTT function can choose to accept the request.

NOTE 2: If the received SIP INVITE request contains an emergency indication set to a value of "true", the participating MCPTT function can choose to allow an exception to the limit on the number of private calls and accept the request.

3) shall determine the MCPTT ID of the calling user from public user identity in the P-Asserted-Identity header field of the SIP INVITE request;

NOTE 3: The MCPTT ID of the calling user is bound to the public user identity at the time of service authorisation, as documented in subclause 7.3.

4) if the participating MCPTT function cannot find a binding between the public user identity and an MCPTT ID or if the validity period of an existing binding has expired, then the participating MCPTT function shall reject the SIP INVITE request with a SIP 404 (Not Found) response with the warning text set to "141 user unknown to the participating function" in a Warning header field as specified in subclause 4.4, and shall not continue with any of the remaining steps;

5) shall:

a) if the <session-type> is set to "private", determine that the call is a private call; and

b) if the <session-type> is set to "first-to-answer", determine that the call is a first-to-answer-call;

6) if the call is a:

a) private call, determine the public service identity of the controlling MCPTT function for the private call service associated with the originating user's MCPTT ID identity; or

b) first-to-answer, determine the public service identity of the controlling MCPTT function for the first-to-answer call service associated with the originating user's MCPTT ID identity;

7) if the participating MCPTT function is unable to identify the controlling MCPTT function for the private call service or first-to-answer call service associated with the originating user's MCPTT ID identity, it shall reject the SIP INVITE request with a SIP 404 (Not Found) response with the warning text "142 unable to determine the controlling function" in a Warning header field as specified in subclause 4.4, and shall not continue with any of the remaining steps;

8) if the incoming SIP INVITE request does not contain an application/resource-lists MIME body, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in subclause 4.4, and shall not continue with the rest of the steps;

9) if the call is a private call and the incoming SIP INVITE request contains an application/resource-lists MIME body with more than one <entry> element, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in subclause 4.4, and shall not continue with the rest of the steps;

10) if the <allow-private-call> element of the <ruleset> element is not present in the MCPTT user profile document on the participating MCPTT function or is present with the value "false" (see the MCPTT user profile document in 3GPP TS 24.484 [50]), indicating that the user identified by the MCPTT ID is not authorised to initiate private calls, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response, with warning text set to "107 user not authorised to make private calls" in a Warning header field as specified in subclause 4.4, and shall not continue with the rest of the steps;

11) if the call is a private call and:

a) if the received SIP INVITE request includes an Answer-Mode header field as specified in IETF RFC 5373 [18] with the value "Auto" and the <allow-automatic-commencement> element of the <ruleset> element is not present in the MCPTT user profile document on the participating MCPTT function or is present with the value "false" (see the MCPTT user profile document in 3GPP TS 24.484 [50]) indicating that the user identified by the MCPTT ID is not authorised to initiate private call with automatic commencement, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "125 user not authorised to make private call with automatic commencement" in a Warning header field as specified in subclause 4.4, and shall not continue with the rest of the steps;

b) if the received SIP INVITE request includes an Answer-Mode header field as specified in IETF RFC 5373 [18] with the value "Manual" and the <allow-manual-commencement> element of the <ruleset> element is not present in the MCPTT user profile document on the participating MCPTT function or is present with the value "false" (see the MCPTT user profile document in 3GPP TS 24.484 [50]), indicating that the user identified by the MCPTT ID is not authorised to initiate private call with manual commencement, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "126 user not authorised to make private call with manual commencement" in a Warning header field as specified in subclause 4.4, and shall not continue with the rest of the steps;

c) if the received SIP INVITE request contains a <call-transfer-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body set to a value of "true" and the originating participating MCPTT function has no cached mapping of the MCPTT ID of the transferred user and the MCPTT ID of the transfer target, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "170 user not authorised to make a private call transfer request" in a Warning header field as specified in subclause 4.4 and shall skip the rest of the steps;

d) if the received SIP INVITE request contains a <call-forwarding-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body set to a value of "true" and the originating participating MCPTT function has no cached mapping of the MCPTT ID of the forwarded user and the MCPTT ID of the target MCPTT user, shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "xxx user not authorised to make a private call forwarding request" in a Warning header field as specified in subclause 4.4 and shall skip the rest of the steps; and

e) if:

i) the received SIP INVITE request contains no <call-transfer-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body, or if the received SIP INVITE request contains a <call-transfer-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body and the value is set to "false"; and

ii) if the received SIP INVITE request contains no <call-forwarding-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body, or if the received SIP INVITE request contains a <call-forwarding-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body and the value is set to "false":

then:

i) if the <PrivateCall> element exists in the MCPTT user profile document with one or more <entry> elements (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

A) if the "uri" attribute of the <entry> element of the application/resource-lists MIME body does not match with one of the <entry> elements of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

B) if configuration is not set in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) that allows the MCPTT user to make a private call to users not contained within the <entry> elements of the <PrivateCall> element;

then:

A) shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "144 user not authorised to call this particular user" in a Warning header field as specified in subclause 4.4 and shall not continue with the rest of the steps;

12) if the call is a first-to-answer call and if the <PrivateCall> element exists in the MCPTT user profile document with one or more <entry> elements (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

a) if:

i) the "uri" attribute of each and every <entry> element of the application/resource-lists MIME body does not match with any of the <entry> elements of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

ii) if configuration is not set in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) that allows the MCPTT user to make a private call to users not contained within the <entry> elements of the <PrivateCall> element;

then:

i) shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "153 user not authorised to call any of the users requested in the first-to-answer call" in a Warning header field as specified in subclause 4.4 and shall not continue with the rest of the steps;

12A) if the call is a first-to-answer call, the received SIP INVITE request contains a <functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body and with the <mcpttinfo> element containing the <mcptt-Params> element with the <call-to-functional-alias-ind> element set to "true", and the <ListOfAllowedFAsToCall> element exists with one or more <entry> elements within the entry of the FunctionalAliasList element corresponding to the calling <functional-alias-URI> in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

a) if the "uri" attribute of the <entry> element of the application/resource-lists MIME body does not match with any of the <entry> elements of the <ListOfAllowedFAsToCall> element of the entry within the FunctionalAliasList element corresponding to the calling <functional-alias-URI> of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

then:

a) shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "171 functional alias not allowed to call this particular functional alias" in a Warning header field as specified in subclause 4.4 and shall not continue with the rest of the steps;

13) if the call is a first-to-answer call and:

a) if the <allow-request-first-to-answer-call> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) or is set to a value of "false", (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

then:

a) shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "156 user not authorised to originate a first-to-answer call" in a Warning header field as specified in subclause 4.4 and shall not continue with the rest of the steps;

14) shall validate the media parameters and if the MCPTT speech codec is not offered in the "SIP INVITE request for originating participating MCPTT function" shall reject the request with a SIP 488 (Not Acceptable Here) response. Otherwise, continue with the rest of the steps;

15) shall generate a SIP INVITE request as specified in subclause 6.3.2.1.3 with the following clarifications:

a) if the conditions in step 12) above were executed and the participating MCPTT function determined that the "uri" attribute of only one of the <entry> elements of the application/resource-lists MIME body matched with an <entry> element of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) then the <session-type> in the application/vnd.3gpp.mcptt-info+xml MIME body of the SIP INVITE request generated in subclause 6.3.2.1.3 is set to "private"; and

b) if the conditions in step 12) above were executed, then only the <entry> element(s) of the application/resource-lists MIME body that have a "uri" attribute that matched with an <entry> elements of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) are included in the application/resource-lists MIME body in the SIP INVITE request generated in subclause 6.3.2.1.3;

16) shall set the Request-URI to the public service identity of the controlling MCPTT function hosting the private call service or first-to-answer call service as determined by step 6);

17) shall set the <mcptt-calling-user-id> element in an application/vnd.3gpp.mcptt-info+xml MIME body of the SIP INVITE request to the MCPTT ID of the calling user;

18) if the call is a private call and:

a) if a Priv-Answer-Mode header field specified in IETF RFC 5373 [18] was received in the incoming SIP INVITE request with a value of "Manual", shall not include a Priv-Answer-Mode header field in the outgoing SIP INVITE request;

b) if the <allow-force-auto-answer> element of the <ruleset> element is not present in the MCPTT user profile document on the participating MCPTT function or is present with the value "false" (see the MCPTT user profile document in 3GPP TS 24.484 [50]), and the Priv-Answer-Mode header field specified in IETF RFC 5373 [18] was received in the incoming SIP INVITE request with a value of "Auto", shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "143 not authorised to force auto answer" in a Warning header field as specified in subclause 4.4, and shall not continue with the rest of the steps;

c) if the <allow-force-auto-answer> element of the <ruleset> element is present in the MCPTT user profile document with the value "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the participating MCPTT function, and the Priv-Answer-Mode header field specified in IETF RFC 5373 [18] was received in the incoming SIP INVITE request with a value of "Auto", shall include the Priv-Answer-Mode header field set to a value of "Auto" in the outgoing SIP INVITE request;

d) if a Priv-Answer-Mode header field containing the value of "Auto" has not been included in the outgoing SIP INVITE request as specified in step 17) above and the incoming "SIP INVITE request for originating participating MCPTT function" contained an Answer-Mode header field as specified in IETF RFC 5373 [18], then shall populate the Answer-Mode header field of the outgoing SIP INVITE request with the contents of the Answer-Mode header field from the incoming "SIP INVITE request for originating participating MCPTT function";

19) shall include in the SIP INVITE request an SDP offer based on the SDP offer in the received "SIP INVITE request for originating participating MCPTT function", as specified in subclause 6.3.2.1.1.1;

19a) if the received SIP INVITE request contains a <functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body, then shall check if the status of the functional alias is activated for the MCPTT ID. If the functional alias status is activated, then the participating MCPTT function shall set the <functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body in the outgoing SIP INVITE request to the received value, otherwise shall not include a <functional-alias-URI> element;

NOTE 4: The participating MCPTT server learns the functional alias state for an MCPTT ID from procedures specified in subclause 9A.2.2.2.7.

20) shall include a Resource-Priority header field according to rules and procedures of 3GPP TS 24.229 [4] set to the value indicated in the Resource-Priority header field if included in the SIP INVITE request from the MCPTT client;

21) if, according to subclause 6.4, the SIP INVITE request is regarded as being received with an implicit request to grant the floor to the originating MCPTT client, the participating MCPTT function:

if:

a) the incoming SIP INVITE request contained an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Report> element included in the <location-info> root element; and

b) the <allow-location-info-when-talking> element of the <ruleset> element of the MCPTT user profile document identified by the MCPTT ID of the calling MCPTT user (see the MCPTT user profile document in 3GPP TS 24.484 [50]) is set to a value of "true";

then shall copy the application/vnd.3gpp.mcptt-location-info+xml MIME body from the received SIP INVITE request into the outgoing SIP INVITE request;

otherwise:

if:

a) the participating MCPTT function has available the location of the originating MCPTT client; and

b) the <allow-location-info-when-talking> element of the <ruleset> element of the MCPTT user profile document identified by the MCPTT ID of the calling MCPTT user (see the MCPTT user profile document in 3GPP TS 24.484 [50]) is set to a value of "true";

then shall include an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Report> element included in the <location-info> root element; and

22) shall forward the SIP INVITE request, according to 3GPP TS 24.229 [4].

Upon receiving a SIP 180 (Ringing) response, the participating MCPTT function:

1) shall generate a SIP 180 (Ringing) response to the SIP INVITE request as specified in the subclause 6.3.2.1.5.1;

2) shall include the P-Asserted-Identity header field as received in the incoming SIP 180 (Ringing) response;

3) shall include Warning header field(s) received in the incoming SIP 180 (Ringing) response; and

4) shall send the SIP 180 (Ringing) response to the inviting MCPTT client according to 3GPP TS 24.229 [4].

Upon receiving a SIP 200 (OK) response, the participating MCPTT function:

1) shall generate a SIP 200 (OK) response as specified in the subclause 6.3.2.1.5.2;

2) shall include in the SIP 200 (OK) response an SDP answer as specified in the subclause 6.3.2.1.2.1;

3) shall include Warning header field(s) received in the incoming SIP 200 (OK) response;

4) shall include the P-Asserted-Identity header field received in the incoming SIP 200 (OK) response into the outgoing SIP 200 (OK) response;

5) shall include an MCPTT session identity mapped to the MCPTT session identity provided in the Contact header field of the received SIP 200 (OK) response;

5A) shall include the answer state into the P-Answer-State header field of the outgoing SIP 200 (OK) response, if received in the P-Answer-State header field of the incoming SIP 200 (OK) response;

6) shall send the SIP 200 (OK) response to the inviting MCPTT client according to 3GPP TS 24.229 [4];

7) shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

8) shall start the SIP session timer according to rules and procedures of IETF RFC 4028 [7].

The participating MCPTT function shall forward any other SIP response that does not contain SDP, including any MIME bodies contained therein, along the signalling path to the originating network according to 3GPP TS 24.229 [4].

\* \* \* Next Change \* \* \* \*

###### 11.1.1.3.1.2 Private call and first-to-answer call initiation using pre-established session

Upon receipt of a "SIP REFER request for a pre-established session", with:

1) the Refer-To header field containing a Content-ID ("cid") Uniform Resource Locator (URL) as specified in IETF RFC 2392 [62] that points to an application/resource-lists MIME body as specified in IETF RFC 5366 [20] containing one or more <entry> element(s) with a "uri" attribute containing a SIP URI set to the MCPTT ID of the called user(s);

2) an hname body" parameter in the headers portion of the SIP URI specified above containing an application/vnd.3gpp.mcptt-info MIME body with the <session-type> element set to "private" or "first-to-answer"; and

3) a Content-ID header field set to the "cid" URL;

the participating function:

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the SIP REFER request with a SIP 500 (Server Internal Error) response. The participating MCPTT function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [24] and shall not continue with the rest of the steps;

NOTE 1: If the application/vnd.3gpp.mcptt-info MIME body included in the SIP REFER request as described at the top of the present subclause contains an <emergency-ind> element or <imminentperil-ind> element set to a value of "true", and this is an authorised request for originating a priority call as determined by subclause 6.3.2.1.8.1, the participating MCPTT function can according to local policy choose to accept the request.

2) shall determine the MCPTT ID of the calling user from public user identity in the P-Asserted-Identity header field of the SIP REFER request;

3) if the participating MCPTT function cannot find a binding between the public user identity and an MCPTT ID or if the validity period of an existing binding has expired, then the participating MCPTT function shall reject the SIP REFER request with a SIP 404 (Not Found) response with the warning text set to "141 user unknown to the participating function" in a Warning header field as specified in subclause 4.4, and shall not continue with any of the remaining steps;

4) if the received SIP REFER request does not contain an application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field, shall reject the "SIP REFER request for pre-established session" with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in subclause 4.4, and shall not continue with the rest of the steps;

5) if the received SIP REFER request contains an application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field with more than one <entry> element each with an application/vnd.3gpp.mcptt-info MIME body with the <session-type> element:

a) not set to "first-to-answer", shall reject the "SIP REFER request for pre-established session" with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in subclause 4.4, and shall not continue with any of the remaining steps; or

b) set to "first-to-answer", determine that the call is a first-to-answer call;

6) if the received SIP REFER request contains an application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field with only one <entry> element with an application/vnd.3gpp.mcptt-info MIME body with the <session-type> element:

a) not set to "private", shall reject the "SIP REFER request for pre-established session" with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in subclause 4.4, and shall not continue with any of the remaining steps; or

b) set to "private", determine that the call is a private call;

7) if the call is a:

a) private call, shall determine the public service identity of the controlling MCPTT function for the private call service associated with the originating user's MCPTT ID; or

b) first-to-answer call, shall determine the public service identity of the controlling MCPTT function for the first-to-answer call service associated with the originating user's MCPTT ID;

NOTE 2: How the participating MCPTT server discovers the public service identity of the controlling MCPTT function associated with the private call service or first-to-answer service of the calling user is out of scope of the current document.

8) if the participating MCPTT function is unable to identify the controlling MCPTT function for the private call service or first-to-answer call service associated with the originating user's MCPTT ID, it shall reject the REFER request with a SIP 404 (Not Found) response with the warning text "142 unable to determine the controlling function" in a Warning header field as specified in subclause 4.4, and shall not continue with any of the remaining steps;

9) if the <allow-private-call> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the participating MCPTT function or is present with the value "false", indicating that the user identified by the MCPTT ID is not authorised to initiate private calls, shall reject the "SIP REFER request for pre-established session" with a SIP 403 (Forbidden) response to the SIP REFER request, with warning text set to "107 user not authorised to make private calls" in a Warning header field as specified in subclause 4.4;

10) if the call is a private call:

a) if the received SIP REFER request includes an Answer-Mode header field as specified in IETF RFC 5373 [18] set to "Auto" contained in the headers portion of the SIP URI present in the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field, and the <allow-automatic-commencement> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the participating MCPTT function or is present with the value "false" (indicating that the user identified by the MCPTT ID is not authorised to initiate private call with automatic commencement), shall reject the "SIP REFER request for pre-established session" with a SIP 403 (Forbidden) response including warning text set to "125 user not authorised to make private call with automatic commencement" in a Warning header field as specified in subclause 4.4, and shall not continue with the rest of the steps;

b) if the received SIP REFER request includes an Answer-Mode header field as specified in IETF RFC 5373 [18] set to "Manual" contained in the headers portion of the SIP URI present in the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field, and the <allow-manual-commencement> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the participating MCPTT function or is present with the value "false" (indicating that the user identified by the MCPTT ID is not authorised to initiate private call with manual commencement), shall reject the "SIP REFER request for pre-established session" with a SIP 403 (Forbidden) response including warning text set to "126 user not authorised to make private call with manual commencement" in a Warning header field as specified in subclause 4.4 and shall not continue with the rest of the steps;

c) if the <allow-force-auto-answer> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the participating MCPTT function or is present with the value "false", and the SIP REFER request contained a Priv-Answer-Mode header field as specified in IETF RFC 5373 [18] set to "Auto" in the headers portion of the SIP URI in the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field, shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "143 not authorised to force auto answer" in a Warning header field as specified in subclause 4.4, and shall not continue with the rest of the steps; and

d) if the received SIP REFER request contains a <call-transfer-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body set to a value of "true" and the originating participating MCPTT function has no cached mapping of the MCPTT ID of the transferred user and the MCPTT ID of the transfer target, shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "170 user not authorised to make a private call transfer request" in a Warning header field as specified in subclause 4.4 and shall skip the rest of the steps;

e) if the received SIP REFER request contains a <call-forwarding-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body set to a value of "true" and the originating participating MCPTT function has no cached mapping of the MCPTT ID of the forwarded user and the MCPTT ID of the target MCPTT user, shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "xxx user not authorised to make a private call forwarding request" in a Warning header field as specified in subclause 4.4 and shall skip the rest of the steps; and

f) if:

i) the received SIP REFER request contains no <call-transfer-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body, or if the received SIP REFER request contains a <call-transfer-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body and the value is set to "false"; and

ii) if the received SIP REFER request contains no <call-forwarding-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body, or if the received SIP REFER request contains a <call-forwarding-ind> element in the application/vnd.3gpp.mcptt-info+xml MIME body and the value is set to "false";

then:

i) if the <PrivateCall> element exists in the MCPTT user profile document with one or more <entry> elements (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

A) if the SIP URI in the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field not match with one of the <entry> elements of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

B) if configuration is not set in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) that allows the MCPTT user to make a private call to users not contained within the <entry> elements of the <PrivateCall> element;

then:

A) shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "144 user not authorised to call this particular user" in a Warning header field as specified in subclause 4.4 and shall not continue with the rest of the steps;

11) if the call is a first-to-answer call and if the <PrivateCall> element exists in the MCPTT user profile document with one or more <entry> elements (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

a) the "uri" attribute of each and every <entry> element of the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field does not match with any of the <entry> elements of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

b) if configuration is not set in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) that allows the MCPTT user to make a private call to users not contained within the <entry> elements of the <PrivateCall> element;

then:

a) shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "153 user not authorised to call any of the users requested in the first-to-answer call" in a Warning header field as specified in subclause 4.4 and shall not continue with the rest of the steps;

11A) if the call is a first-to-answer call, the received SIP REFER request contains a <functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body and the <mcpttinfo> element containing the <mcptt-Params> element with the <call-to-functional-alias-ind> element set to "true", the <ListOfAllowedFAsToCall> element exists with one or more <entry> elements within the entry of the FunctionalAliasList element corresponding to the calling <functional-alias-URI> in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

a) if the "uri" attribute of the <entry> element of the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field does not match with any of the <entry> elements of the <ListOfAllowedFAsToCall> element of the entry within the FunctionalAliasList element corresponding to the calling <functional-alias-URI> of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

then:

a) shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "171 functional alias not allowed to call this particular functional alias" in a Warning header field as specified in subclause 4.4 and shall not continue with the rest of the steps;

12) if the call is a first-to-answer call and:

a) if the <allow-request-first-to-answer-call> element of the <ruleset> element is not present in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) or is set to a value of "false", (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

then:

a) shall reject the "SIP REFER request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "156 user not authorised to originate a first-to-answer call" in a Warning header field as specified in subclause 4.4 and shall not continue with the rest of the steps;

13) if the "SIP REFER request for a pre-established session" contained a Refer-Sub header field containing "false" value and a Supported header field containing "norefersub" value, shall handle the SIP REFER request as specified in 3GPP TS 24.229 [4], IETF RFC 3515 [25] as updated by IETF RFC 6665 [26], and IETF RFC 4488 [22] without establishing an implicit subscription;

14) shall generate a final SIP 200 (OK) response to the "SIP REFER request for a pre-established session" according to 3GPP TS 24.229 [4];

NOTE 3: In accordance with IETF RFC 4488 [22], the participating MCPTT function inserts the Refer-Sub header field containing the value "false" in the SIP 200 (OK) response to the SIP REFER request to indicate that it has not created an implicit subscription.

15) shall send the response to the "SIP REFER request for a pre-established session" towards the MCPTT client according to 3GPP TS 24.229 [4];

16) shall generate a SIP INVITE request as specified in subclause 6.3.2.1.4 with the following clarifications:

a) if the conditions in step 11) above were executed and the participating MCPTT function determined that the "uri" attribute of only one of the <entry> elements of the application/resource-lists MIME body matched with an <entry> element of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) then the <session-type> in the application/vnd.3gpp.mcptt-info+xml MIME body of the SIP INVITE request generated in subclause 6.3.2.1.4 is set to "private"; and

b) if the conditions in step 11) above were executed, then only the <entry> element(s) of the application/resource-lists MIME body that have a "uri" attribute that matched with an <entry> elements of the <PrivateCall> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) are included in the application/resource-lists MIME body in the SIP INVITE request generated in subclause 6.3.2.1.4;

17) shall set the Request-URI of the SIP INVITE request to the public service identity of the controlling MCPTT function hosting the private call service or first-to-answer call service for the calling MCPTT user as determined above in step 7);

18) if the call is a private call:

a) if the SIP REFER request contained a Priv-Answer-Mode header field as specified in IETF RFC 5373 [18] set to "Manual" in the headers portion of the SIP URI in the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field, shall copy the Priv-Answer-Mode header field from the incoming SIP REFER request to the outgoing SIP INVITE request;

b) if the <allow-force-auto-answer> element of the <ruleset> element is present in the MCPTT user profile document with the value "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the participating MCPTT function, and the Priv-Answer-Mode header field specified in IETF RFC 5373 [18] was received in the headers portion of the SIP URI in the application/resource-lists MIME body referenced by a "cid" URL in the Refer-To header field, with a value set to "Auto", shall copy the Priv-Answer-Mode header field to the outgoing SIP INVITE request; and

c) if a Priv-Answer-Mode header field containing the value of "Auto" has not been copied to the outgoing SIP INVITE request as specified in step 16) above, and the incoming SIP REFER request contained an Answer-Mode header field in the headers portion of the SIP URI in the application/resource-lists referenced by a "cid" URL in the Refer-To header field, then copy the Answer-Mode header field to the outgoing SIP INVITE request;

19) if the received SIP REFER request contained a Resource-Priority header field, shall include in the outgoing SIP INVITE request a Resource-Priority header field according to rules and procedures of 3GPP TS 24.229 [4] set to the value indicated in the Resource-Priority header field of the received SIP REFER request;

NOTE 4: The participating MCPTT function will leave verification of the Resource-Priority header field to the controlling MCPTT function.

19a) if the call is a private call and if the received SIP REFER request contains a <functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body, then shall check if the status of the functional alias is activated for the MCPTT ID. If the functional alias status is activated, then the participating MCPTT function shall set the <functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body in the outgoing SIP INVITE request to the received value, otherwise shall not include a <functional-alias-URI> element;

19b) if, according to subclause 6.4, the SIP REFER request is regarded as being received with an implicit request to grant the floor to the initiating MCPTT client:

if:

a) the incoming SIP REFER request contained an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Report> element included in the <location-info> root element; and

b) the <allow-location-info-when-talking> element of the <ruleset> element of the MCPTT user profile document identified by the MCPTT ID of the calling MCPTT user (see the MCPTT user profile document in 3GPP TS 24.484 [50]) is set to a value of "true";

then shall copy the application/vnd.3gpp.mcptt-location-info+xml MIME body from the received SIP REFER request into the outgoing SIP INVITE request;

otherwise:

if:

a) the participating MCPTT function has available the location of the initiating MCPTT client; and

b) the <allow-location-info-when-talking> element of the <ruleset> element of the MCPTT user profile document identified by the MCPTT ID of the calling MCPTT user (see the MCPTT user profile document in 3GPP TS 24.484 [50]) is set to a value of "true";

then shall include an application/vnd.3gpp.mcptt-location-info+xml MIME body with a <Report> element included in the <location-info> root element; and

20) shall forward the SIP INVITE request according to 3GPP TS 24.229 [4].

Upon receiving SIP provisional responses for the SIP INVITE request the participating MCPTT function:

1) shall discard the received SIP responses without forwarding them.

Upon receiving a SIP 200 (OK) response for the SIP INVITE request the participating MCPTT function:

1) if:

a) the received SIP 2xx response was in response to a request for an MCPTT private call; or

b) the received SIP 2xx response was in response to a SIP INVITE request for a first-to-answer call which did not include an a=key-mgmt "mikey" attribute value containing a MIKEY-SAKKE I\_MESSAGE in the SDP answer;

then:

a) shall interact with the media plane as specified in 3GPP TS 24.380 [5];

2) if the received SIP 2xx response was in response to a request for an MCPTT emergency private call and does not contain a Warning header field as specified in subclause 4.4 with the warning text containing the mcptt-warn-code set to "149":

a) shall generate a SIP re-INVITE request to be sent towards the MCPTT client within the pre-established session as specified in subclause 6.3.2.1.8.6;

b) shall send the SIP re-INVITE request towards the MCPTT client within the pre-established session according to 3GPP TS 24.229 [4]; and

c) if the received SIP 2xx response was in response to a request for a first-to-answer call, upon receipt of a SIP 2xx response to the SIP re-INVITE, shall interact with the media plane as specified in 3GPP TS 24.380 [5]; and

3) if the received SIP 2xx response was in response to a SIP INVITE request for a first-to-answer call which was not a request for an MCPTT emergency private call and contains an SDP answer including an a=key-mgmt "mikey" attribute value containing a MIKEY-SAKKE I\_MESSAGE, the participating MCPTT function:

a) shall generate a SIP re-INVITE request as specified in subclause 6.3.2.1.8.7;

b) shall send the SIP re-INVITE request towards the originating MCPTT client according to 3GPP TS 24.229 [4]; and

c) upon receipt of a SIP 2xx response to the SIP re-INVITE, shall interact with the media plane as specified in 3GPP TS 24.380 [5].

Upon receiving a SIP INFO request from the controlling MCPTT function within the dialog of the SIP INVITE request for an MCPTT emergency private call, the participating MCPTT function shall:

1) shall send a SIP 200 (OK) response to the SIP INFO request to the controlling MCPTT function as specified in 3GPP TS 24.229 [4];

2) shall generate a SIP re-INVITE request to be sent towards the MCPTT client within the pre-established session as specified in subclause 6.3.2.1.8.6; and

3) shall send the SIP re-INVITE request the MCPTT client according to 3GPP TS 24.229 [4].

Upon receipt of a SIP 4xx, 5xx or 6xx response to the above SIP INVITE request in step 20) the participating MCPTT function:

1) shall interact with the media plane as specified in 3GPP TS 24.380 [5].

\* \* \* Next Change \* \* \* \*

##### 11.1.1.3.2 Terminating procedures

This subclause covers both on demand session and pre-established session.

In the procedure in this subclause a private call requested by an MCPTT user refers to a private call:

1) with no <call-transfer-ind> element present in the application/vnd.3gpp.mcptt-info+xml MIME body element or with a <call-transfer-ind> element present in the application/vnd.3gpp.mcptt-info+xml MIME body element and the value is set to "false"; and

2) with no <call-forwarding-ind> element present in the application/vnd.3gpp.mcptt-info+xml MIME body element or with a <call-forwarding-ind> element present in the application/vnd.3gpp.mcptt-info+xml MIME body element and the value is set to "false".

Upon receipt of a "SIP INVITE request for terminating participating MCPTT function", the participating MCPTT function:

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 500 (Server Internal Error) response. The participating MCPTT function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [24], and shall not continue with the rest of the steps;

NOTE: If the received SIP INVITE request contains an emergency indication set to a value of "true", the participating MCPTT function can choose to accept the request.

2) shall check the presence of the isfocus media feature tag in the Contact header field and if it is not present then the participating MCPTT function shall reject the request with a SIP 403 (Forbidden) response with the warning text set to "104 isfocus not assigned" in a Warning header field as specified in subclause 4.4, and shall not continue with the rest of the steps;

3) if the <session-type> element of the application/vnd.3gpp.mcptt-info+xml MIME body is set to "private" and the Answer-Mode Indication in the application/poc-settings+xml MIME body has not yet been received from the invited MCPTT client as defined in subclause 7.3.3 or subclause 7.3.4, shall reject the request with a SIP 480 (Temporarily Unavailable) response with the warning text set to "146 T-PF unable to determine the service settings for the called user" in a Warning header field as specified in subclause 4.4 and shall not continue with the rest of the steps;

4) if :

a) the <allow-call-forwarding> element exists in the MCPTT user profile document, and the value is set to "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

b) the <call-forwarding-on> element exists in the MCPTT user profile document and the value is set to "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

c) the <call-forwarding-condition> element exists in the MCPTT user profile document, and the value is set to "immediate" (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

then:

a) if the <forwarding-immediate-list> element of the application/vnd.3gpp.mcptt-info+xml MIME body of the incoming SIP INVITE request exists, shall check if the number of maximum immediate private call forwardings as specified in the <max-immediate-forwardings> element of the <anyExt> element contained in the <OnNetwork> element of the MCPTT service configuration document (see the service configuration document in 3GPP TS 24.484 [50]) has been reached. If reached, the MCPTT server shall reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "xxy maximum number of allowed forwardings exceeded" in a Warning header field as specified in subclause 4.4 and shall skip the rest of the steps;

b) shall reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 480 (Temporarily Unavailable) response including warning text set to "xxz call is forwarded" in a Warning header field as specified in subclause 4.4;

c) shall generate a SIP MESSAGE request as described in subclause 6.3.2.y to trigger the call forwarding of a private call and shall include in the application/vnd.3gpp.mcptt-info+xml MIME body;

i) shall set the <forwarding-reason> element to a value of "immediate";

d) shall send the SIP MESSAGE request as specified to 3GPP TS 24.229 [4]; and

e) upon receipt of SIP 2xx response to the outgoing SIP MESSAGE requests, the participating MCPTT function shall follow the procedures specified in 3GPP TS 24.229 [4] and shall skip the rest of the steps;

5) shall use the MCPTT ID present in the <mcptt-request-uri> element of the application/vnd.3gpp.mcptt-info+xml MIME body of the incoming SIP INVITE request to retrieve the binding between the MCPTT ID and public user identity;

6) if the binding between the MCPTT ID and public user identity does not exist and if the <allow-call-forwarding> element exists in the MCPTT user profile document, and the value is set to "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and if the <call-forwarding-on> element exists in the MCPTT user profile document, and the value is set to "true" (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and if the <call-forwarding-condition> element exists in the MCPTT user profile document, and the value is set to "no-answer" (see the MCPTT user profile document in 3GPP TS 24.484 [50]);

a) if the incoming SIP INVITE request contains a <forwarding-other-conditions-list> element with one or more <entry> elements the MCPTT server shall reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "xxy maximum number of allowed forwardings exceeded" in a Warning header field as specified in subclause 4.4 and shall skip the rest of the steps;

b) shall reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 480 (Temporarily Unavailable) response including warning text set to "xxz call is forwarded" in a Warning header field as specified in subclause 4.4;

c) shall generate a SIP MESSAGE request as described in subclause 6.3.2.y to trigger the call forwarding of a private call and shall include in the application/vnd.3gpp.mcptt-info+xml MIME body;

d) shall set the <forwarding-reason> element to a value of "no-answer";

e) shall send the SIP MESSAGE request as specified to 3GPP TS 24.229 [4]; and

f) Upon receipt of SIP 2xx response to the outgoing SIP MESSAGE requests, the participating MCPTT function shall follow the procedures specified in 3GPP TS 24.229 [4] and shall skip the rest of the steps;

7) if the binding between the MCPTT ID and public user identity does not exist, then the participating MCPTT function shall reject the SIP INVITE request with a SIP 404 (Not Found) response. Otherwise, continue with the rest of the steps;

8) if the call is a private call requested by an MCPTT user and if the called user identified by the MCPTT ID is unable to participate in private calls as identified in the called user's MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) on the terminating participating MCPTT function, shall reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "127 user not authorised to be called in private call" in a Warning header field as specified in subclause 4.4;

9) if the call is a private call requested by an MCPTT user and if the <session-type> element of the application/vnd.3gpp.mcptt-info+xml MIME body is set to "private" and if the <IncomingPrivateCallList> element exists in the MCPTT user profile document with one or more <entry> elements (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

a) if the <mcptt-calling-user-id> element of the application/vnd.3gpp.mcptt-info+xml MIME body of the incoming SIP INVITE request does not match with one of the <entry> elements of the <IncomingPrivateCallList> element of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

b) if configuration is not set in the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) that allows the MCPTT user to receive a private call by users not contained within the <entry> elements of the <IncomingPrivateCallList> element;

then:

a) shall reject the "SIP INVITE request for terminating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "159 user not authorised to be called by this originating user" in a Warning header field as specified in subclause 4.4 and shall not continue with the rest of the steps;

10) if the call is a first-to-answer call, the received SIP INVITE request contains a <functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body and the <mcpttinfo> element containing the <mcptt-Params> element with the <call-to-functional-alias-ind> element set to "true", the <ListOfAllowedFAsToBeCalledFrom> element exists in the MCPTT user profile document with one or more <entry> elements (see the MCPTT user profile document in 3GPP TS 24.484 [50]) and:

a) if the <called-functional-alias-URI> element of the application/vnd.3gpp.mcptt-info+xml MIME body of the incoming SIP INVITE request does not match with any of the <entry> elements of the <ListOfAllowedFAsToBeCalledFrom> element of the entry within the FunctionalAliasList element corresponding to the called functional alias of the MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]); and

then:

a) shall reject the "SIP INVITE request for originating participating MCPTT function" with a SIP 403 (Forbidden) response including warning text set to "172 functional alias not allowed to be called from this functional alias" in a Warning header field as specified in subclause 4.4 and shall not continue with the rest of the steps;

Editor’s Note: [eMONASTERY2, CR 0691] How the controlling MCPTT server adds and populates <called-functional-alias-URI> element for a first-to-answer-call is FFS.

11) if necessary, shall start timer TNP1 (call forwarding no answer timer) according to the conditions stated in subclause 6.3.2.x.

12) shall perform the automatic commencement procedures specified in subclause 6.3.2.2.5.1 and according to IETF RFC 5373 [18] if one of the following conditions are met:

a) "SIP INVITE request for terminating participating MCPTT function" contains an Answer-Mode header field with the value "Auto";

b) "SIP INVITE request for terminating participating MCPTT function" does not contain an Answer-Mode header field and the Answer-Mode Indication received in the application/poc-settings+xml MIME body received from the invited MCPTT client as per subclause 7.3.3 or subclause 7.3.4 is set to "auto-answer"; or

c) "SIP INVITE request for terminating participating MCPTT function" contains a Priv-Answer-Mode header field with the value "Auto"; and

13) shall perform the manual commencement procedures specified in subclause 6.3.2.2.6.1 and according to IETF RFC 5373 [18] if either of the following conditions are met:

a) "SIP INVITE request for terminating participating MCPTT function" contains an Answer-Mode header field with the value "Manual";

b) "SIP INVITE request for terminating participating MCPTT function" does not contain an Answer-Mode header field and Answer-Mode Indication received in the application/poc-settings+xml MIME body received from the invited MCPTT client as per subclause 7.3.3 or subclause 7.3.4 is set to "manual-answer"; or

c) "SIP INVITE request for terminating participating MCPTT function" contains a Priv-Answer-Mode header field with the value "Manual".

\* \* \* Next Change \* \* \* \*

### 11.1.x Private call forwarding

#### 11.1.x.1 General

In the procedures of subclause 11.1.x:

- the term "requesting MCPTT user" is used to refer to the MCPTT user who sent a request to initiate a private call forwarding based on manual user input;

- the term "forwarded MCPTT user" is used to refer to the MCPTT user who is being forwarded to a new target MCPPT user; and

- the term "target MCPTT user" is used to refer to the MCPTT user that is the new target of the private call.

#### 11.1.x.2 Client procedures

##### 11.1.x.2.1 Private call forwarding request procedures

The following procedure covers the case when an MCPTT user decides to forward an incoming MCPTT private call to a new target MCPTT ID or functional alias based on manual user input instead of accepting the incoming MCPTT private call. If the MCPTT user decides to forward an incoming MCPTT private call to a new target MCPTT ID or functional alias based on manual user input, the MCPTT client:

1) if:

a) the <allow-call-fwd-manual-any> element of the <ruleset> element is not present in the requesting MCPTT user's MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) or is set to a value of "false";

then:

a) should indicate to the requesting MCPTT user that the requesting MCPTT user is not authorised to initiate a private call forwarding request; and

b) shall skip the rest of the steps of the present subclause;

2) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33] with the following clarifications:

a) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP MESSAGE request;

b) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

c) may include a P-Preferred-Identity header field in the SIP MESSAGE request containing a public user identity as specified in 3GPP TS 24.229 [4];

d) shall include an application/vnd.3gpp.mcptt-info+xml MIME body as specified in clause F.1 with the <mcpttinfo> element containing the <mcptt-Params> element with the <anyExt> element containing:

i) the <request-type> element set to a value of "forward-private-call-request";

ii) the <mcptt-called-party-id> element set to the MCPTT ID or the functional alias to be used of the target MCPTT user;

iii) if the call is requested to be forwarded to a functional alias and the MCPTT client is aware of active functional aliases, then with the <call-to-functional-alias-ind> set to "true"; otherwise,with the <call-to-functional-alias-ind> set to "false"; and

NOTE 1: For call forwarding to an MCPTT ID the value of the <mcptt-called-party-id> is the MCPTT ID of the target user, while for call forwarding to a functional alias the value is the functional alias of the target user.

iv) the <forwarding-reason> element set to a value of "manual-input";

e) shall insert in the SIP MESSAGE request a MIME resource-lists body with the MCPTT ID of the forwarded MCPTT user, according to rules and procedures of IETF RFC 5366 [20]; and

f) shall set the Request-URI to the public service identity identifying the participating MCPTT function serving the MCPTT user;

4) shall send the SIP MESSAGE request towards the MCPTT server according to rules and procedures of 3GPP TS 24.229 [4].

NOTE 2: The SIP MESSAGE is sent towards the client of the forwarded MCPTT user. The procedure how to process this incoming SIP MESSAGE is descibed in subclause 11.1.x.2.2. Subclause 11.1.x.2.2 also contains references to subclause 11.1.1.2.1.1 and subclause 11.1.1.2.2.1 describing how to originate an MCPTT private call from the forwarded MCPTT user to the target MCPTT.

Upon receipt of a SIP 4xx, 5xx or 6xx response to the SIP MESSAGE request, should indicate to the requesting MCPTT user the failure of the sent private call forwarding request and skip the rest of the steps.

Upon receiving a "SIP MESSAGE request for forwarding private call response for terminating client", the MCPTT client:

1) shall determine the success or failure of the sent forwarding private call request from the value of the <forwarding-call-outcome> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element of the application/vnd.3gpp.mcptt-info+xml MIME body included in the received SIP MESSAGE request and generate and send a SIP 200 (OK) response according to rules and procedures of 3GPP TS 24.229 [4]; and

2) should indicate to the requesting MCPTT user the success or failure of the sent private call forwarding request.

##### 11.1.x.2.2 Client procedures for handling incoming private call forwarding request

Upon receiving a "SIP MESSAGE request for forwarding private call request for terminating client", the MCPTT client:

1) should indicate to the forwarded MCPTT user that a request to forward the previously initiated call to a new target MCPTT user has been received;

2) shall extract the MCPTT ID of the target MCPTT user from the <mcptt-called-party-id> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request;

3) if according to local policy on-demand sessions are to be used for forwarding of private calls, shall invoke the procedures of subclause 11.1.1.2.1.1 to originate an MCPTT private call to the target MCPTT user; and

4) if according to local policy pre-established sessions are to be used for forwarding of private calls and a pre-established session is available, shall invoke the procedures of subclause 11.1.1.2.2.1 to originate an MCPTT private call to the target MCPTT user.

Upon completion of the procedures of subclause 11.1.1.2.1.1 or subclause 11.1.1.2.2.1, the MCPTT client:

1) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33] with the following clarifications:

a) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), in a P-Preferred-Service header field according to IETF RFC 6050 [9] in the SIP MESSAGE request;

b) shall include an Accept-Contact header field with the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

c) may include a P-Preferred-Identity header field in the SIP MESSAGE request containing a public user identity as specified in 3GPP TS 24.229 [4];

d) shall include in an application/resource-lists+xml MIME body the MCPTT ID contained in the <mcptt-calling-user-id> element in the application/ vnd.3gpp.mcptt-info+xml MIME body of the received SIP MESSAGE request; and

e) shall include an application/vnd.3gpp.mcptt-info+xml MIME body as specified in clause F.1 with the <mcpttinfo> element containing the <mcptt-Params> element with the <anyExt> element containing:

i) the <response-type> element set to a value of "forwarding-private-call-response";

ii) the <mcptt-called-party-id> set to the MCPTT ID of the target MCPTT user called by the forwarded MCPTT user;

iii) if the procedures of subclause 11.1.1.2.1.1 or subclause 11.1.1.2.2.1 were successful in originating an MCPTT private call to the identified MCPTT user, a <forwarding-call-outcome> element set to a value of "success"; and

iv) if the procedures of subclause 11.1.1.2.1.1 or subclause 11.1.1.2.2.1 were not successful in originating an MCPTT private call to the identified MCPTT user, a <forwarding-call-outcome> element set to a value of "fail";

2) shall set the Request-URI to the public service identity identifying the participating MCPTT function serving the forwarded MCPTT user; and

3) shall send the SIP MESSAGE request according to rules and procedures of 3GPP TS 24.229 [4].

#### 11.1.x.3 Participating MCPTT function procedures

##### 11.1.x.3.1 Originating procedures

Upon receiving a "SIP MESSAGE request for forwarding private call for originating participating MCPTT function" the participating MCPTT function:

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the SIP MESSAGE request with a SIP 500 (Server Internal Error) response. The participating MCPTT function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [24] and skip the rest of the steps;

2) shall determine the MCPTT ID of the calling user from the public user identity in the P-Asserted-Identity header field of the SIP MESSAGE request;

NOTE: The MCPTT ID of the calling user is bound to the public user identity at the time of service authorisation, as documented in subclause 7.3.

3) if the participating MCPTT function cannot find a binding between the public user identity and an MCPTT ID or if the validity period of an existing binding has expired, then the participating MCPTT function shall reject the SIP MESSAGE request with a SIP 404 (Not Found) response with the warning text set to "141 user unknown to the participating function" in a Warning header field as specified in subclause 4.4, and shall not continue with the rest of the steps;

4) if:

a) the "SIP MESSAGE request for forwarding private call for originating participating MCPTT function" contains the <request-type> element set to a value of "forward-private-call-request"; and

b) if the <allow-call-forward-manual-input> element of the <ruleset> element is not present in the requesting MCPTT user's MCPTT user profile document (see the MCPTT user profile document in 3GPP TS 24.484 [50]) or is set to a value of "false";

then:

a) shall reject the SIP MESSAGE request with a SIP 403 (Forbidden) response including warning text set to "xxx user not authorised to make a private call forwarding request" in a Warning header field as specified in subclause 4.4, and skip the rest of the steps;

5) shall determine the public service identity of the controlling MCPTT function for the forwarding private call service for the requesting MCPTT user;

6) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33];

7) shall set the Request-URI of the outgoing SIP MESSAGE request to the public service identity of the controlling MCPTT function associated with the call forwarding service for the requesting MCPTT user;

8) shall copy the contents of the application/vnd.3gpp. mcptt-info+xml MIME body in the received SIP MESSAGE request into an application/vnd.3gpp.mcptt-info+xml MIME body as specified in clause F.1 included in the outgoing SIP MESSAGE request;

9) shall set the <mcptt-calling-user-id> element of the <mcpttinfo> element containing the <mcptt-Params> element to the MCPTT ID determined in step 2) above;

10) shall copy the contents of the application/resource-lists MIME body in the received SIP MESSAGE request into an application/resource-lists MIME body in the outgoing SIP MESSAGE request;

11) shall set the P-Asserted-Identity in the outgoing SIP MESSAGE request to the public user identity in the P-Asserted-Identity header field contained in the received SIP MESSAGE request;

12) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

13) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

14) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), into the P-Asserted-Service header field of the outgoing SIP MESSAGE request; and

15) shall send the SIP MESSAGE request as specified to 3GPP TS 24.229 [4].

Upon receipt of a SIP 2xx response in response to the SIP MESSAGE request sent in step 15), the participating MCPTT function shall generate a SIP 200 (OK) response and forward the SIP 200 (OK) response to the MCPTT client.

Upon receipt of a SIP 4xx, 5xx or 6xx response to the SIP MESSAGE request, shall forward the error response to the MCPTT client.

##### 11.1.x.3.2 Terminating procedures

Upon receiving a

- "SIP MESSAGE request for forwarding private call request for terminating participating MCPTT function"; or

- "SIP MESSAGE request for forwarding private call response for terminating participating MCPTT function";

the participating MCPTT function:

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the SIP MESSAGE request with a SIP 500 (Server Internal Error) response. The participating MCPTT function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [24] and skip the rest of the steps;

2) shall use the MCPTT ID present in the <mcptt-request-uri> element of the application/vnd.3gpp.mcptt-info+xml MIME body of the incoming SIP MESSAGE request to retrieve the binding between the MCPTT ID and public user identity;

3) if the binding between the MCPTT ID and public user identity does not exist, then the participating MCPTT function shall reject the SIP MESSAGE request with a SIP 404 (Not Found) response and skip the rest of the steps;

4) shall generate an outgoing SIP MESSAGE request as specified in subclause 6.3.2.2.11;

5) if the "SIP MESSAGE request for forwarding private call for terminating participating MCPTT function" contains the <request-type> element set to a value of "forward-private-call-request":

a) shall extract the MCPTT ID of the target MCPTT user from the <mcptt-called-party-id> element contained in the <anyExt> element of the <mcptt-Params> element of the <mcpttinfo> element contained in the application/vnd.3gpp.mcptt-info+xml MIME body contained in the received SIP MESSAGE request; and

b) shall cache the mapping of the MCPTT ID used in step 2) and target MCPTT ID extracted in step a);

NOTE: If multiple private call forwardings are in progress at the same time for the same user, multiple mappings have to be stored.

6) shall include the ICSI value "urn:urn-7:3gpp-service.ims.icsi.mcptt" (coded as specified in 3GPP TS 24.229 [4]), into the P-Asserted-Service header field of the outgoing SIP MESSAGE request; and

7) shall send the SIP MESSAGE request as specified in 3GPP TS 24.229 [4].

#### 11.1.x.4 Controlling MCPTT function procedures

Upon receiving a:

- "SIP MESSAGE request for forwarding private call request for controlling MCPTT function"; or

- "SIP MESSAGE request for forwarding private call response for controlling MCPTT function";

the controlling MCPTT function:

1) if unable to process the request due to a lack of resources or a risk of congestion exists, may reject the SIP MESSAGE request with a SIP 500 (Server Internal Error) response. The controlling MCPTT function may include a Retry-After header field to the SIP 500 (Server Internal Error) response as specified in IETF RFC 3261 [24] and skip the rest of the steps;

2) shall reject the SIP request with a SIP 403 (Forbidden) response and not process the remaining steps if an Accept-Contact header field does not include the g.3gpp.icsi-ref media feature tag containing the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt";

3) if the incoming SIP MESSAGE request does not contain an application/resource-lists MIME body or contains an application/resource-lists MIME body with more than one <entry> element, shall reject the SIP MESSAGE request with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in subclause 4.4, and shall skip the rest of the steps;

4) shall generate a SIP MESSAGE request in accordance with 3GPP TS 24.229 [4] and IETF RFC 3428 [33];

5) shall include an Accept-Contact header field containing the g.3gpp.mcptt media feature tag along with the "require" and "explicit" header field parameters according to IETF RFC 3841 [6];

6) shall include an Accept-Contact header field with the media feature tag g.3gpp.icsi-ref with the value of "urn:urn-7:3gpp-service.ims.icsi.mcptt" along with parameters "require" and "explicit" according to IETF RFC 3841 [6];

7) shall copy the contents of the application/vnd.3gpp. mcptt-info+xml MIME body in the received SIP MESSAGE request into an application/vnd.3gpp.mcptt-info+xml MIME body included in the outgoing SIP MESSAGE request;

8) if the incoming SIP MESSAGE request contains in the application/vnd.3gpp. mcptt-info+xml MIME body <call-to-functional-alias-ind> set to "true" shall identify the MCPTT ID(s) of the MCPTT user(s) that have activated the received functional alias by performing the actions specified in subclause 9A.2.2.2.8:

a) if the functional alias is not activated by any MCPTT user, shall reject the SIP MESSAGE request with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in subclause 4.4, and shall skip the rest of the steps;

b) if the functional alias is activated by one MCPTT user, shall use the MCPTT ID of that user as new target MCPTT ID;

c) if the functional alias is simultaneously activated by multiple MCPTT users, shall select an appropriate MCPTT ID based on local policy. The selection of an appropriate MCPTT ID is left to implementation. The outcome of the selection includes rejection, if no suitable MCPTT ID is found:

i) if the controlling MCPTT function was unable to select an MCPTT ID, shall reject the SIP MESSAGE request with a SIP 403 (Forbidden) response including warning text set to "145 unable to determine called party" in a Warning header field as specified in subclause 4.4, and shall skip the rest of the steps; and

ii) if the selection step concluded by selecting an appropriate MCPTT ID, this MCPTT ID shall be used as new target MCPTT ID;

d) shall copy the new target MCPTT ID in the MIME resources body of the incoming SIP MESSAGE request, into the <mcptt-request-uri> element in the application/vnd.3gpp.mcptt-info+xml MIME body of the outgoing SIP MESSAGE request; and

e) shall set <call-to-functional-alias-ind> to "false" in the application/vnd.3gpp. mcptt-info+xml MIME body of the outgoing SIP message;

9) shall set the Request-URI to the public service identity of the terminating participating MCPTT function associated to the MCPTT user identified by the MCPTT ID contained in the <mcptt-request-uri> element in the application/vnd.3gpp.mcptt-info+xml MIME body of the outgoing SIP MESSAGE request;

NOTE: How the controlling MCPTT function finds the address of the terminating MCPTT participating function is out of the scope of the present specfication.

10) shall include a P-Asserted-Service header field with the value "urn:urn-7:3gpp-service.ims.icsi.mcptt";

11) shall copy the public user identity of the calling MCPTT user from the P-Asserted-Identity header field of the incoming SIP MESSAGE request into the P-Asserted-Identity header field of the outgoing SIP MESSAGE request; and

12) shall send the SIP MESSAGE request according to rules and procedures of 3GPP TS 24.229 [4].

Upon receipt of SIP 2xx responses to the outgoing SIP MESSAGE requests, the controlling MCPTT function shall generate a SIP 200 (OK) response and forward the SIP 200 (OK) response to the originating participating MCPTT function.

Upon receipt of a SIP 4xx, 5xx or 6xx response to the SIP MESSAGE request, controlling MCPTT function shall forward the error response to the originating participating MCPTT function.

\* \* \* Next Change \* \* \* \*

## B.2.x Timers in the terminating participating MCPTT function

The table B.2.x-1 provides a description of the timers used by the terminating participating MCPTT function, specifies the timer values, describes the reason for starting of the timer, normal stop and the action on expiry.

Table B.2.x-1: controlling MCPTT function timers

| Timer | Timer value | Cause of start | Normal stop | On expiry |
| --- | --- | --- | --- | --- |
| TNP1 (call forwarding no answer timer)  (NOTE 1) | Obtained from the user profile document in the <call-forwarding-no-answer-timeout> element as specified in 3GPP TS 24.484 [50]. If the <call-forwarding-no-answer-timeout> element does not exist in the user profile document, the terminating participating MCPTT function shall use a default value of 20 seconds for the timer TNP1. | On reception of a SIP INVITE request to start a private call with the terminating MCPTT user having private call forwarding turned on with the <call-forwarding-condition> "NoAnswer" as specified in 3GPP TS 24.484 [50]. | On receipt of a SIP 200 (OK) response to the SIP INVITE request for the private call to an MCPTT user having private call forwarding turned on with the <call-forwarding-condition> "NoAnswer" as specified in 3GPP TS 24.484 [50]. | Retrieve new target from the <call-forwarding-target> element as specified in 3GPP TS 24.484 [50], and proceed according to 6.3.2.x |
| NOTE 1: More than one instance of this timer can be running in the controlling MCPTT function, each instance is associated with a specific private call. | | | | |

\* \* \* Next Change \* \* \* \*

## F.1.3 Semantic

The <mcpttinfo> element is the root element of the XML document. The <mcpttinfo> element can contain subelements.

NOTE 1: The subelements of the <mcpttinfo> are validated by the <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded"/> particle of the <mcpttinfo> element

If the <mcpttinfo> contains the <mcptt-Params> element then:

1) the <mcptt-access-token>, <mcptt-request-uri>, <mcptt-calling-user-id>, <mcptt-called-party-id>, <mcptt-calling-group-id>, <emergency-ind>, <alert-ind>, <imminentperil-ind>, <originated-by>, <mcptt-client-id>, <functional-alias-URI>, <called-functional-alias-URI> and <non-acknowledged-user> can be included with encrypted content;

2) for each element in 1) that is included with content that is not encrypted:

a) the element has the "type" attribute set to "Normal";

b) if the element is one of the following elements: <mcptt-request-uri>, <mcptt-calling-user-id>, <mcptt-called-party-id>, <mcptt-calling-group-id>, <originated-by>, <functional-alias-URI>, <called-functional-alias-URI> or <non-acknowledged-user>, then the <mcpttURI> element is included;

c) if the element is one of the following elements:<mcptt-access-token> or <mcptt-client-id>, then the <mcpttString> element is included; and

d) if the element is one of the following elements: <emergency-ind>, <alert-ind>, <alert-ind-rcvd>, <imminentperil-ind>, or <emergency-ind-rcvd>, then the <mcpttBoolean> element is included;

3) for each element in 1) that is included with content that is encrypted:

a) the element has the "type" attribute set to "Encrypted";

b) the <xenc:EncryptedData> element from the "[http://www.w3.org/2001/04/xmlenc#](http://www.w3.org/2001/04/xmlenc)" namespace is included and:

i) can have a "Type" attribute can be included with a value of "<http://www.w3.org/2001/04/xmlenc#Content>";

ii) can include an <EncryptionMethod> element with the "Algorithm" attribute set to value of "http://www.w3.org/2009/xmlenc11#aes128-gcm";

iii) can include a <KeyInfo> element with a <KeyName> element containing the base 64 encoded XPK-ID; and

iv) includes a <CipherData> element with a <CipherValue> element containing the encrypted data.

NOTE 2: When the optional attributes and elements are not included within the <xenc:EncryptedData> element, the information they contain is known to sender and the receiver by other means.

If the <mcpttinfo> contains the <mcptt-Params> element then:

1) the <mcptt-access-token> can be included with the access token received during authentication procedure as described in 3GPP TS 24.482 [49];

2) the <session-type> can be included with:

a) a value of "chat" to indicate that the MCPTT client wants to join a chat group call

b) a value of "prearranged" to indicate the MCPTT client wants to make a prearranged group call;

c) a value of "private" to indicate the MCPTT client wants to make a private call;

d) a value of "first-to-answer" to indicate that the MCPTT client wants to make a first-to-answer call; or

e) a value of "ambient-listening" to indicate the MCPTT client wants to make an ambient listening call;

3) the <mcptt-request-uri> can be included with:

a) a value set to an MCPTT group ID or temporary MCPTT group ID when the <session-type> is set to a value of "prearranged" or "chat"; and

b) a value set to the MCPTT ID of the called MCPTT user when the <session-type> is set to a value of "private";

4) the <mcptt-calling-user-id> can be included, set to MCPTT ID of the originating user;

5) the <mcptt-called-party-id> can be included, set to the MCPTT ID of the terminating user;

6) the <mcptt-calling-group-id> can be included to indicate the MCPTT group identity to the terminating user;

7) the <required> can be included in a SIP 183 (Session Progress) from a non-controlling MCPTT function of an MCPTT group to inform the controlling MCPTT function that the group on the non-controlling MCPTT function has group members in the group document which are marked as <on-network-required>, as specified in 3GPP TS 24.481 [31];

8) the <emergency-ind> can be:

a) set to "true" to indicate that the call that the MCPTT client is initiating is an emergency MCPTT call; or

b) set to "false" to indicate that the MCPTT client is cancelling an emergency MCPTT call (i.e. converting it back to a non-emergency call)

9) the <alert-ind> can be:

a) set to "true" in an emergency call initiation to indicate that an alert to be sent; or

b) set to "false" when cancelling an emergency call which requires an alert to be cancelled also

10) if the <session-type> is set to "chat" or "prearranged":

a) the <imminentperil-ind> can be set to "true" to indicate that the call that the MCPTT client is initiating is an imminent peril group MCPTT call;

11) the <broadcast-ind> can be:

a) set to "true" indicates that the MCPTT client is initiating a broadcast group call; or

b) set to "false" indicates that the MCPTT client is initiating a non-broadcast group call;

12) the <mc-org> can be:

a) set to the MCPTT user's Mission Critical Organization in an emergency alert sent by the MCPTT server to terminating MCPTT clients;

13) the <floor-state> can be:

a) set to "floor-idle", if the floor is idle in a non-controlling MCPTT function; or

b) set to "floor-taken" if the floor state in a non-controlling MCPTT function is taken;

14) the <associated-group-id>:

a) if the <mcptt-request-uri> element contains a group identity then this element can include an MCPTT group ID associated with the group identity in the <mcptt-request-uri> element. E.g. if the <mcptt-request-uri> element contains a temporary group identity (TGI), then the <associated-group-id> element can contain the constituent MCPTT group ID;

15) the <originated-by>:

a) can be included, set to the MCPTT ID of the originating user of an MCPTT emergency alert when being cancelled by another authorised MCPTT user;

16) the <MKFC-GKTPs>:

a) contains a group key transport payload carrying one or more MKFC(s) and MKFC-ID(s) as described in3GPP TS 24.481 [31] subclause 7.4, to be used for protection of multicast floor control signalling when the UE operates on the network;

17) the <mcptt-client-id>:

a) can be included, set to the MCPTT client ID of the MCPTT client that originated a SIP INVITE request, SIP REFER request or SIP MESSAGE request;

18) the <alert-ind-rcvd>

a) can be set to true and included in a SIP MESSAGE to indicate that the emergency alert or cancellation was received successfully; and

19) the <anyExt> can be included with the following elements not declared in the XML schema:

a) an <ambient-listening-type> of type "xs:string":

i) set to a value of "remote-init" when the listening MCPTT user of an ambient listening call initiates the call; or

ii) set to a value of "local-init" when the listened-to MCPTT user of an ambient listening call initiates the call; and

b) a <release-reason> of type "xs:string":

i) set to a value of "private-call-expiry" when the ambient listening call is release due to the expiry of the private call timer;

ii) set to a value of "administrator-action" when the ambient listening call is released by an MCPTT administrator;

iii) set to a value of "not selected for call" when the when a dialog is released with an MCPTT client that was not selected as the terminating client of a first-to-answer call;

iv) set to a value of "call-request-for-listened-to-client" when there is a call request targeted to the listened-to client;

v) set to a value of "call-request-initiated-by-listened-to-client" when there is a call request initiated by the listened-to client; or

vi) set to a value of "authentication of the MIKEY-SAKE I\_MESSAGE failed" by a MCPTT client when the signature of the cannot be verified;

c) a <request-type> of type "xs:string":

i) set to value of "private-call-call-back-request" when a client initiates a private call call-back request;

ii) set to a value of "private-call-call-back-cancel-request" when a client initiates a private call call-back cancel request;

iii) set to a value of "group-selection-change-request" when a client initiates a group selection change request;

iv) set to a value of "remotely-initiated-group-call-request" when a client initiates a remotely initiated group call request;

v) set to a value of "remotely-initiated-private-call-request" when a client initiates a remotely initiated private call request;

vi) set to a value of "transfer-private-call-request" when a client initiates a transfer private call request; or

vii) set to a value of "forward-private-call-request" when a client initiates a forward private call request.

d) a <response-type> of type "xs:string":

i) set to a value of "private-call-call-back-response" when a client responds to a private call call-back request;

ii) set to a value of "private-call-call-back-cancel-response" when a client responds to a private call call-back cancel request;

iii) set to a value of "group-selection-change-response" when a client responds to a group selection change request;

iv) set to a value of "remotely-initiated-group-call-response" when a client responds to a remotely initiated call request;

v) set to a value of "remotely-initiated-private-call-response" when a client responds to a remotely initiated private call request;

vi) set to a value of "transfer-private-call-response" when a client responds to a transfer private call request; or

vii) set to a value of "forward-private-call-response" when a client responds to a forward private call request.

e) an <urgency indication> of type "xs:string":

(i) set to a value of "low", "normal" or "high" to indicate the urgency of a private call call-back request; and

f) a <time-of-request> of type "xs:dateTime":

(i) set to the date and time at which the private call call-back request was initiated, in the form: "YYYY-MM-DDThh:mm:ss" where:

- YYYY indicates the year;

- MM indicates the month;

- DD indicates the day;

- T indicates the start of the required time section;

- hh indicates the hour;

- mm indicates the minute; and

- ss indicates the second; and

g) a <selected-group-change-outcome> of type "xs:string":

i) set to a value of "success" when a client reports that it has successfully changed its selected group as requested by a received group selection change request; or

ii) set to a value of "fail" when a client reports that it has failed to change its selected group as requested by a received group selection change request;

h) an<affiliation-required> of type "xs:boolean":

i) set to a value of "true" when received by a client in a group-selection-change-request indicates that the client needs to affiliate to the specified group;

i) a <remotely-initiated-call-outcome> of type "xs:string":

i) set to a value of "success" when a client reports that it has successfully initiated a call requested by a received remotely initiated call request; or

ii) set to a value of "fail" when a client reports that it has failed to initiated a call triggered as requested by a received group selection change request;

j) a <notify-remote-user> of type "xs:boolean":

i) set to a value of "true" when the remote user is to be notified of a remotely initiated call request; or

ii) set to a value of "false" when the remote user is to be notified of a received remotely initiated call request;

k) a <functional-alias-URI> of type "mcpttinfo:contentType" set to a value of the functional alias that is used together with the "mcptt-calling-user-id";

l) an <emergency-alert-area-ind> of type "xs:boolean":

i) set to a value of "true" when the MCPTT client has entered an emergency alert area; or

ii) set to a value of "false" when the MCPTT client has exited an emergency alert area;

m) an <group-geo-area-ind> of type "xs:boolean":

i) set to a value of "true" when the MCPTT client has entered a group geographic area; or

ii) set to a value of "false" when the MCPTT client has exited a group geographic area;

n) one or more <non-acknowledged-user> of type "mcpttinfo:contentType" elements set to the MCPTT IDs of invited members to a group call that have not sent a SIP 200 (OK) response;

o) a <call-to-functional-alias-ind> of type "xs:boolean":

i) set to a value of "true" when the MCPTT client is using a functional alias to identify the MCPTT IDs of the potential target MCPTT users; or

ii) set to a value of "false" when the MCPTT client is using MCPTT IDs to identify the potential target MCPTT users;

p) the <emergency-ind-rcvd>

i) can be set to "true" and included in a SIP MESSAGE to indicate that the in-progress emergency cancellation request was received successfully.

q) a <call-transfer-ind> of type "xs:boolean":

i) set to a value of "true" when the MCPTT client is making a private call as a result of a call transfer; or

ii) set to a value of "false" when the MCPTT client is making a normal private call;

r) a <transfer-call-outcome> of type "xs:string":

i) set to a value of "success" when a client reports that it has successfully initiated a call requested by a received call transfer request; or

ii) set to a value of "fail" when a client reports that it has failed to initiated a call triggered as requested by a received call transfer request;

s) a <called-functional-alias-URI> of type "mcpttinfo:contentType" set to the value of the functional alias to be called;

t) a <call-forwarding-ind> of type "xs:boolean":

i) set to a value of "true" when the MCPTT client is making a private call as a result of a call forwarding; or

ii) set to a value of "false" when the MCPTT client is making a normal private call;

u) a <forwarding-call-outcome> of type "xs:string":

i) set to a value of "success" when a client reports that it has successfully initiated a call requested by a received call forwarding request; or

ii) set to a value of "fail" when a client reports that it has failed to initiate a call triggered as requested by a received call forwarding request;

v) a <forwarding-immediate-list> of type "mcpttup:ListEntryType";

w) a <forwarding-other-conditions-list> of type "mcpttup:ListEntryType"; and

x) a <forwarding-reason> of type "xs:string":

i) set to a value of "immediate" for call forwarding immediate;

ii) set to a value of "no-answer" for call forwarding no answer; or

iii) set to a value of "manual-input" for call forwarding based on manual user input.

Absence of the <emergency-ind>, <alert-ind> and <imminentperil-ind> in a SIP INVITE or a SIP REFER request indicates that the MCPTT client is initiating a non-emergency private call or non-emergency group call.

Absence of the <broadcast-ind> in a SIP INVITE or a SIP REFER request indicates that the MCPTT client is initiating a non-broadcast group call.

Absence of the <floor-state> in a SIP 200 (OK) response from the non-controlling MCPTT function indicates that the floor is idle.

Absence of the <call-to-functional-alias-ind> in a SIP INVITE or a SIP REFER request for a first-to-answer call indicates the use of the MCPTT IDs of the potential target MCPTT users.

Absence of the <call-transfer-ind> in a SIP INVITE or a SIP REFER request for a private call indicates that the call is not caused by a request for call transfer.

Absence of the <call-forwarding-ind> in a SIP INVITE or a SIP REFER request for a private call indicates that the call is not caused by a request for call forwarding.

The recipient of the XML ignores any unknown element and any unknown attribute.

\* \* \* End of Change

\* \* \* End of Changes \* \* \* \*